



## Five-Year Review Report

# Second Five-Year Review for the Mound, Ohio, Site Miamisburg, Ohio

September 2006



U.S. Department  
of Energy

## Office of Legacy Management



**Five-Year Review Report**

**Second Five-Year Review  
for the Mound, Ohio, Site  
Miamisburg, Ohio**

September 2006

Work Performed by S.M. Stoller Corporation under DOE Contract No. DE-AC01-02GJ79491  
for the U.S. Department of Energy Office of Legacy Management, Grand Junction, Colorado

Approved by:

Date:



Art Kleinrath  
Site Manager

Sept 21 2006



# Contents

Acronyms.....	vii
Executive Summary.....	ix
1.0 Introduction.....	1-1
1.1 Purpose.....	1-1
1.2 Site Status.....	1-2
2.0 Site Chronology.....	2-1
3.0 Background.....	3-1
3.1 Site Description.....	3-1
3.2 Land and Resource Use.....	3-1
3.3 Site History and Enforcement Activities.....	3-3
3.3.1 History.....	3-3
3.3.2 Enforcement and Agreements - Mound 2000 Process.....	3-3
3.4 Geology and Hydrogeology.....	3-5
4.0 Remedial Actions.....	4-1
4.1 Institutional Controls.....	4-1
4.1.1 Remedy Selection.....	4-3
4.1.2 Remedy Implementation.....	4-3
4.1.2.1 Industrial Land-use.....	4-4
4.1.2.2 Soils.....	4-4
4.1.2.3 Groundwater.....	4-5
4.1.3 Operations and Maintenance.....	4-5
4.2 Operable Unit 1.....	4-5
4.2.1 Remedy Selection.....	4-7
4.2.2 Remedy Implementation.....	4-7
4.2.3 Operations and Maintenance.....	4-8
4.3 Phase I Groundwater (MNA) Remedy.....	4-8
4.3.1 Remedy Selection.....	4-9
4.3.2 Remedy Implementation.....	4-10
4.3.3 Operations and Maintenance.....	4-11
5.0 Progress Since Last Review.....	5-1
5.1 Institutional Controls.....	5-1
5.2 Operable Unit 1.....	5-1
5.2.1 Protectiveness Statement from Last Review.....	5-1
5.2.2 Status of Recommendations from Last Review.....	5-1
5.2.3 Status of Other Prior Issues.....	5-2
5.3 Phase I Groundwater (MNA) Remedy.....	5-3
5.4 Operable Unit 4 – Miami-Erie Canal.....	5-3
6.0 Five-Year Review Process.....	6-1
6.1 Administrative Components of the Five-Year Review.....	6-1
6.2 Community Notification and Involvement.....	6-1
6.3 Interviews and Record Review.....	6-1
6.4 Site Inspections.....	6-2
6.4.1 2002 Annual Inspection.....	6-2
6.4.2 2003 Annual Inspection.....	6-2
6.4.3 2004 Annual Inspection.....	6-3
6.4.4 2005 Annual Inspection.....	6-4

6.4.5	2006 Inspections .....	6-5
6.4.5.1	Institutional Controls Inspection.....	6-5
6.4.5.2	Phase I Groundwater .....	6-5
6.4.5.3	OU-1 Landfill.....	6-6
6.4.5.4	OU-1 Pump and Treatment System .....	6-7
6.5	Document Review.....	6-7
6.5.1	Basis for Response Action .....	6-7
6.5.2	Operations and Maintenance.....	6-9
6.5.3	Remedy Performance.....	6-9
6.5.4	Legal Standard Regarding Remedial Action .....	6-10
6.6	Risk Information Review .....	6-11
6.6.1	Applicable or Relevant and Appropriate Requirements .....	6-11
6.6.2	Exposure Pathways .....	6-12
6.6.3	Remedial Action Objectives (RAOs).....	6-12
6.6.4	Changes in Risk Assumptions since last Five-Year Review .....	6-13
6.7	Data Review.....	6-13
6.7.1	Operable Unit 1 .....	6-14
6.7.1.1	Hydraulic Capture.....	6-14
6.7.1.2	System Performance .....	6-15
6.7.1.3	Groundwater Monitoring .....	6-18
6.7.1.4	Compliance Monitoring.....	6-19
6.7.1.5	Soil Vapor Extraction (SVE) System Performance .....	6-20
6.7.1.6	Rebound Test .....	6-20
6.7.2	Phase I Groundwater.....	6-21
6.7.2.1	Early Data .....	6-21
6.7.2.2	2004 Data .....	6-22
6.7.2.3	2005 Data .....	6-23
7.0	Technical Assessment .....	7-1
7.1	Institutional Controls .....	7-1
7.1.1	Remedial Action Performance.....	7-1
7.1.2	Operations and Maintenance.....	7-1
7.1.3	Opportunities for Optimization.....	7-1
7.1.4	Early Indicators of Potential Issues.....	7-1
7.2	OU-1 Remedy .....	7-2
7.2.1	Remedial Action Performance.....	7-2
7.2.2	Operations and Maintenance.....	7-2
7.2.3	Implementation of Institutional Controls and other Measures .....	7-2
7.2.4	Monitoring Activities.....	7-3
7.2.5	Opportunities for Optimization.....	7-3
7.2.6	Early Indicators of Potential Issues.....	7-3
7.3	Phase I Groundwater (MNA) Remedy .....	7-4
7.3.1	Remedial Action Performance.....	7-4
7.3.2	Operations and Maintenance.....	7-4
7.3.3	Implementation of Institutional Controls and other Measures .....	7-4
7.3.4	Monitoring Activities.....	7-4
7.3.5	Opportunities for Optimization.....	7-5
7.3.6	Early Indicators of Potential Issues.....	7-5
8.0	Issues .....	8-1

9.0	Recommendations and Follow-Up Actions .....	9-1
9.1	Issue 1 .....	9-1
9.2	Issues 2, 3, 4, and 5 .....	9-1
9.3	Issue 6 .....	9-2
9.4	Issue 7 .....	9-2
9.5	Issue 8 .....	9-2
10.0	Protectiveness Statements .....	10-1
10.1	Institutional Controls (including Phase I) .....	10-1
10.2	Operable Unit 1 .....	10-1
10.3	Phase I Groundwater (MNA) Remedy .....	10-1
11.0	Next Review .....	11-1
12.0	References .....	12-1

## Figures

Figure 3-1.	Mound, Ohio, Site Location Map .....	3-2
Figure 4-1.	Land Parcels at the Mound Plant Site .....	4-2
Figure 4-2.	Operable Unit 1 Site Map .....	4-6
Figure 4-3.	Monitoring Network for Phase I Groundwater (MNA) Remedy.....	4-9
Figure 6-1.	Mass Removed by OU-1 Pump and Treat System .....	6-16
Figure 6-2.	VOC Concentrations in Extraction Well 0412 .....	6-16
Figure 6-3.	VOC Concentrations in Extraction Well 0413 .....	6-17
Figure 6-4.	VOC Concentrations in Extraction Well 0414 .....	6-17
Figure 6-5.	VOC Concentrations in Wells Along the Compliance Boundaries .....	6-18
Figure 6-6.	VOC Concentrations in Wells Downgradient of OU-1 .....	6-19
Figure 6-7.	TCE Concentrations in Wells 0411 and 0443 and Seep 0617 in Phase I .....	6-24
Figure 6-8.	cis-1,2-DCE Concentrations in Wells 0411 and 0443 and Seep 0617 in Phase I.....	6-24
Figure 6-9.	Barium Concentrations in Wells 0400, 0402, 0445, and P033 in Phase I .....	6-25
Figure 6-10.	Combined Radium 226/228 Concentrations in Wells 0400, 0402, 0445, and P033 in Phase I.....	6-25
Figure 6-11.	Chromium Concentrations in Wells 0319, 0400, 0442, and 0443 in Phase I....	6-26
Figure 6-12.	Nickel Concentrations in Wells 0319, 0400, 0442, and 0443 in Phase I.....	6-27

## Tables

Table 4-1. Groundwater and Hydraulic Monitoring for OU-1.....	4-8
Table 4-2. Remedy (MNA) Monitoring for Phase I.....	4-10
Table 4-3. Confirmatory Monitoring for Phase I.....	4-11
Table 4-4. Trigger Levels for Phase I MNA Remedy.....	4-11
Table 6-1. Documents Supporting Basis for Response Action at the Mound Site.....	6-8
Table 6-2. Documents Supporting Implementation of the Response at the Mound Site.....	6-8
Table 6-3. Documents Supporting Operations and Maintenance at the Mound Site.....	6-9
Table 6-4. Documents Supporting Remedy Performance at the Mound Site.....	6-9
Table 6-5. Documents Supporting Legal Standards Regarding Remedial Action at the Mound Site.....	6-10
Table 6-6. Summary of ARARs that Affect the Protectiveness of Remedies.....	6-11
Table 6-7. Preliminary Remediation Goals for Groundwater in OU-1.....	6-13
Table 6-8. Summary of Hydraulic Gradients for the OU-1 P&T System.....	6-15
Table 6-9. Monitoring Requirements for Outfall 003.....	6-19
Table 8-1. Primary Issues Identified during the Five-Year Review.....	8-1

## Appendixes

Appendix A	Deeds for Parcels D, H, 3, and 4
Appendix B	Site Inspection Checklist
Appendix C	Site Inspection Photographs

## Acronyms

ARAR	applicable or relevant and appropriate requirement
ATD	Authorization to Discharge
BVA	Buried Valley Aquifer
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	<i>Code of Federal Regulations</i>
COC	contaminants of concern
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FFA	Federal Facility Agreement
ft	feet
FY	fiscal year
GPS	global positioning system
ICs	institutional controls
LTS&M	Long-Term Surveillance and Maintenance
MCL	maximum contaminant level
MESH	Miamisburg Environmental Safety and Health
mg/L	milligram(s) per liter
MMCIC	Miamisburg Mound Community Improvement Corporation
MNA	monitored natural attenuation
µg/L	microgram(s) per liter
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
NFA	no further action
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O&M	Operation and Maintenance
ODH	Ohio Department of Health
OEPA	Ohio Environmental Protection Agency
OU	Operable Unit
P&T	pump and treat
PCE	perchloroethene
pCi/L	picocurie(s) per liter
PRG	preliminary remediation goal
PRS	potential release site
RAO	remedial action objective
ROD	Record of Decision
RRE	residual risk evaluation
RREM	Residual Risk Evaluation Methodology
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SVE	soil vapor extraction
TCE	trichloroethylene
VOC	volatile organic compounds

End of current text

## Executive Summary

The Mound Site in Miamisburg, Ohio, is being remediated by the U.S. Department of Energy (DOE) in accordance with the requirements of the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986. This Five-Year Review includes several operable units and areas (parcels) that have been designated part of the remedial action at the Mound Site.

These include:

- Operable Unit 1 (Former Waste Disposal Sites)
- Operable Unit 4 (Miami-Erie Canal)
- Release Block D
- Release Block H
- Phase I (Areas A, B, and C)
- Parcel 3 (GP-1 and GH)
- Parcel 4 (South Property)

The CERCLA Five-Year Review is required by statute. Section 121 (c) of CERCLA requires that remedial actions resulting in any hazardous substances, pollutants, or contaminants remaining at a site above levels that allow for unlimited use and unrestricted exposure be reviewed every five years to ensure protection of human health and the environment.

This is the second Five-Year Review conducted for the Mound Site. Since the last Five-Year Review, completion of soil and building remediation at the Mound site was achieved in August 2006. Institutional controls (ICs) have been implemented for Parcels 3 and Phase I and a monitored natural attenuation (MNA) remedy has been implemented for trichloroethylene (TCE) contaminated groundwater in Phase I. Operation of the pump and treatment system, which controls the migration of TCE contaminated groundwater in the Operable Unit 1 (OU-1) area, continues to operate. The ownership of 5 land parcels has been transferred to the Miamisburg Mound Community Involvement Corporation (MMCIC). Phase I (Sections A, B, and C), and Parcels 6, 7, and 8 have not transferred, but remedial activities have been completed. Additional soil removal work is expected in the OU-1 area to support economic redevelopment. The record of decision (ROD) for the Miami-Erie canal was “no action” and will not be further evaluated under this review.

The ICs implemented at the Mound site are protective of human health and the environment because they are functioning as intended. The groundwater remedy for Phase I is expected to be protective of human health and the environment upon attainment of cleanup goals. In the interim, exposure pathways are being controlled through ICs. The remedy for OU-1 is protective of human health and the environment as exposure pathways are being controlled through plume containment and control of access to the landfill. However, in order to ensure the long-term protectiveness of the remedies, it is recommended that a few actions be taken as best management practices at the site. These actions are:

- Adequate signage that informs visitors that fishing, as well as swimming and wading, is prohibited in the Parcel 4 retention basin should be installed.
- Long-term groundwater and seep monitoring locations should be adequately maintained to ensure that representative samples are obtained and to prevent possible impact to the aquifer via surface water infiltration.

This is the second statutory Five-Year Review for this site. The next Five-Year Review will be conducted in the year 2011.

## Five-Year Review Summary Form

<b><i>SITE IDENTIFICATION</i></b>		
Site name (from WasteLAN): Mound Plant (DOE)		
EPA ID (from WasteLAN): OH6890008984		
Region: 5	State: OH	City/County: Miamisburg / Montgomery
<b><i>SITE STATUS</i></b>		
NPL status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify)		
Remediation status (choose all that apply): <input type="checkbox"/> Under Construction <input checked="" type="checkbox"/> Operating <input checked="" type="checkbox"/> Complete		
Multiple OUs?* <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Construction completion date: Not Applicable	
Has site been put into reuse? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
<b><i>REVIEW STATUS</i></b>		
Lead agency: <input type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input checked="" type="checkbox"/> Other Federal Agency -- U.S. Department of Energy		
Author name: Art Kleinrath		
Author title: Site Manager	Author affiliation: DOE	
Review period:** 09 / 29 / 2001 to 09 / 28 / 2006		
Date(s) of site inspection: 02 / 22 / 2006 and 07 / 13 / 2006		
Type of review:		
<input checked="" type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead <input type="checkbox"/> Regional Discretion		
Review number: <input type="checkbox"/> 1 (first) <input checked="" type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify) _____		
Triggering action:		
<input type="checkbox"/> Actual RA Onsite Construction at OU # _____ <input type="checkbox"/> Actual RA Start at OU# _____ <input type="checkbox"/> Construction Completion <input checked="" type="checkbox"/> Previous Five-Year Review Report <input type="checkbox"/> Other (specify)		
Triggering action date (from WasteLAN): 09 / 28 / 2001		
Due date (five years after triggering action date): 09 / 28 / 2006		

\* ["OU" refers to operable unit.]

\*\* [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

## Five-Year Review Summary Form, cont'd.

### Issues:

Issue 1: Ineffective signage at the Parcel 4 retention basin has resulted in violation of institutional controls (ICs) in the past (land-use inconsistent with industrial/commercial land-use). (Sections 6.5.4 and 6.5.5).

Issues 2, 3, 4, and 5: Permanent ID markers are not installed on all long-term groundwater monitoring wells. The general conditions of the long-term groundwater monitoring locations are in disrepair (i.e., protective casings, protection from vehicular traffic, excessive vegetation, etc.) (Section 6.5 and photographs in Appendix B).

Issue 6: Excessive vegetation is present around the OU-1 facility and structures and on the landfill surface. (Section 6.6.3 and photographs in Appendix B).

Issue 7: Inadequate stormwater control is maintained on the southwestern corner of the landfill. (Section 6.6.3 and photographs in Appendix B).

Issue 8: Inadequate documentation and interpretation of operational and monitoring data for the OU-1 remedy is maintained. (Section 6.4.1).

### Recommendations and Follow-up Actions:

Issue 1. Signage that informs area visitors that fishing, as well as swimming and wading, is prohibited would be more straightforward or alternative signage should be developed.

Issues 2, 3, 4, and 5. A routine maintenance program needs to be established for the long-term groundwater monitoring locations at the Mound site.

Issue 6. A routine maintenance program to address vegetation and general housekeeping needs to be established for the OU-1 area.

Issue 7. A corrective action should be developed to address the inadequate stormwater controls on the southwestern corner of the OU-1 landfill.

Issue 8. An annual report summarizing the hydraulic gradient determinations, groundwater monitoring data, and performance evaluations of the OU-1 pump and treatment and soil vapor extraction (SVE) systems should be prepared.

### Protectiveness Statement(s):

Operable Unit 1: The remedy for OU-1 is protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risks are being controlled through containment of the plume and control of access to the landfill. However, in order to ensure the long-term protectiveness of the remedy, adequate documentation and interpretation of the operational and monitoring data associated with the pump and treatment system should be maintained. Also, long-term monitoring locations should be adequately maintained to ensure that representative samples are obtained and to prevent possible impact to the aquifer via surface water infiltration.

Phase I Groundwater (MNA) Remedy: The remedy for Phase I is expected to be protective of human health and the environment upon attainment of groundwater cleanup goals, through MNA. In the interim exposure pathways that could result in unacceptable risks are being controlled through ICs that prevent the groundwater from being used in the restricted area. However, in order to ensure the long-term protectiveness of the remedy, long-term monitoring locations should be adequately maintained to ensure that representative samples are obtained and to prevent possible impact to the aquifer via surface water infiltration.

Institutional Controls (including Phase I): The remedy for Parcels D, H, 3, and 4 and institutional controls associated with Phase I are protective of human health and the environment because controls are functioning as intended. However, in order to ensure the long-term protectiveness of the remedy, adequate signage that informs visitors that fishing, as well as swimming and wading, is prohibited in the Parcel 4 retention basin should be installed.

### Other Comments:

There are no other comments to make at this time.

## 1.0 Introduction

The U.S. Department of Energy (DOE) has conducted a second Five-Year Review of the remedial actions implemented at the Mound Site in Miamisburg, Ohio. This review was conducted from February 2006 through September 2006. This report documents the results of the review and has been prepared in accordance with the *Comprehensive Five-year Review Guidance* (EPA 2001).

The first Five-year review was completed in September 2001. This was the first review to ensure that the remedial action established in the *Record of Decision for Operable Unit 1* (DOE 1995) remained protective of human health and the environment. The review was a statutory review and the purpose was to ensure the engineered or institutional measures being relied on to protect human health and the environment continued to function and operate as intended such that no unacceptable exposures to residual contamination remaining at the site occurred.

The first Five-Year Review also had a discussion regarding the Records of Decision (RODs) for the 3 land parcels that had transferred at that time. These parcels were Release Blocks D and H and Parcel 4. A protectiveness determination was not made at that time since the first assessment had not been completed at the time of the 2001 review.

This Five-Year Review encompasses several operable units and areas (parcels) that have been designated part of the remedial action at the Mound Site. These include:

- Operable Unit 1 (Former Waste Disposal Sites) - 1995
- Operable Unit 4 (Miami-Erie Canal) - 2004
- Release Block D - 1999
- Release Block H - 1999
- Phase I (Areas A, B, and C) - 2003
- Parcel 3 (GP-1 and GH) - 2001
- Parcel 4 (South Property) - 2001

Although the remedial actions for all of these areas except Operable Unit 1 (OU-1), Parcel 4, and Release Blocks D and H have not been implemented for five years, they are included in this Five-Year Review. The U.S. Environmental Protection Agency (EPA) guidance states that “Five-year reviews should address all operable units and remedial actions that have been initiated at the time of the review.” Also the guidance states “A site is subject to a statutory review if any one of its initiated remedial actions is subject to a statutory review.”

### 1.1 Purpose

The purpose of the Five-Year Review is to determine whether the remedy at a site is expected to be protective of human health and the environment. Where a site has remedial actions that are still ongoing, a Five-Year Review should confirm that immediate threats have been addressed and that the remedy will be protective when complete. The main purpose of the Five-Year Review is to evaluate the implementation and performance of the selected remedy, not to reconsider past remedy decisions. The methods, findings, and conclusions of reviews are

documented in Five-Year Review reports. In addition, Five-Year Review reports identify deficiencies found during the review, if any, and identify recommendations to address them.

Five-year reviews are required by statute. They must be implemented consistent with the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) and the *National Oil and Hazardous Substances Pollution Contingency Plan* (NCP). CERCLA Section 121(c), as amended, states:

“If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than five years after the initiation of such remedial action to ensure that human health and the environment are being protected by the remedial action being implemented.”

The NCP Part 300.430(f)(4)(ii) of the Code of Federal Regulations (CFR) states:

“If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action”

## 1.2 Site Status

Completion of soil and building remediation at the Mound site was achieved in August 2006. At that time, the ownership of 5 land parcels had been transferred to Miamisburg Mound Community Improvement Corporation (MMCIC). Phase I (Sections A, B, and C), and Parcels 6, 7, and 8 (which includes OU-1), have not transferred, but remedial activities have been completed.

DOE through the Operations and Maintenance (O&M) Plans and the Long-Term Surveillance and Maintenance (LTS&M) Plan will maintain the necessary facilities and structures to implement the remedies. These include:

- The OU-1 Pump and Treat system, including 3 extraction wells, soil vapor extraction points, treatment plant, and discharge point will remain after completion of site activities. A groundwater monitoring system has been designated for monitoring in order to evaluate the capture of contaminated groundwater in this area.
- Sampling associated with the Phase I groundwater remedy is on going. Nine monitoring wells and 1 seep comprise the groundwater monitoring network for the Phase I area.
- Institutional controls (ICs) associated with parcels D, H, 3, and 4 and Phase I have been documented in the appropriate ROD and the quit claim deed for the parcel. Upon transfer, the quit claim deed is recorded with Montgomery County as a matter of public record. The Phase I parcel has not been transferred to MMCIC, although the remedial actions have been completed and a Record of Decision finalized.

Soil removal and building demolition in Parcels 6, 7, and 8, which encompass the northern portion of the Mound Plant property, have been completed. A ROD is being developed to address the necessary ICs on the property. Also, tritium impact to the shallow aquifer will be addressed in that ROD. Transfer of this property is anticipated in fiscal year (FY) 2007.

DOE is planning further soil excavation and site development work in the OU-1 area. This work is being developed and it is anticipated that field work will start in FY 2007.

End of current text

## 2.0 Site Chronology

Construction of the Mound facility began in 1946 and served to support the early atomic weapons programs. It later grew into an integrated research, development, and production facility performing work in support of DOE weapons and energy programs, with emphasis on explosives and nuclear technology.

The plant, which was in operation from 1948 to 1995, was situated on 182 acres. In 1981, DOE purchased an additional 124 acres of land south of the original property; however, the property remained undeveloped.

In 1984, the Environmental Restoration Program at the Mound Site was established to collect and assess environmental data in order to evaluate both the nature and extent of contamination and to identify potential exposure pathways and potential human and environmental receptors (i.e., develop a conceptual site model).

The Mound site was placed on the National Priorities List (NPL) in November 1989 because of chemical contamination present in the site groundwater and the site's proximity to a sole source aquifer.

A Federal Facilities Agreement (FFA) between DOE and EPA was signed in October 1990. In July 1993, the FFA became a tripartite agreement through the addition of the Ohio EPA (OEPA).

The OU-1 ROD was approved in 1995. The selected remedy of controlling contamination from the soils and groundwater at OU 1 is collection, treatment, and disposal of groundwater.

In 1995, DOE and its regulators developed an approach to making decisions about the environmental restoration of the Mound site and its facilities. This approach is known as the Mound 2000 process, which meets the requirements of CERCLA Section 120(h)-*Property Transfer of Federal Agencies*. DOE and its regulators used the Mound 2000 process to address the environmental issues associated with the restoration of the site, completion of work at the site, and deletion of the site from the NPL.

The Miami-Erie Canal underwent a soil clean-up, primarily for plutonium, in 1998. The canal, lying outside the Mound Property boundary, was included on the NPL due to impact from operational and accidental releases from the facility.

The sales contract between DOE and MMCIC that establishes how DOE will convey the entire Mound Site by discrete parcels, subject to the CERCLA §120 (h) – *Property Transfer of Federal Agency* was dated January 23, 1998.

The *Record of Decision for Release Block D* was approved in 1999. The selected remedy for release block D is ICs.

The *Record of Decision for Release Block H* was approved in 1999. The selected remedy for release block H is ICs.

The deed for Release Block H was filed with Montgomery County, Ohio on August 8, 1999 and the deed for Release Block D was filed on November 19, 1999.

The *Parcel 4 Record of Decision* - (South Property) was approved in 2001. The selected remedy for Parcel 4 is ICs.

The EPA and OEPA determined that all appropriate CERCLA response actions have been completed for Release Blocks D and H and these areas pose no significant threat to human health or the environment. Therefore, EPA deleted Release Blocks D and H from the NPL on April 16, 2001.

The deed for Parcel 4 was filed with Montgomery County, Ohio on April 19, 2001.

The *Parcel 3 Record of Decision* - (GP1 and GH) was approved in 2001. The selected remedy for Parcel 4 is ICs.

The deed for Parcel 3 was filed with Montgomery County, Ohio on August 2, 2002.

The EPA, with concurrence of the OEPA, determined that the DOE implemented all appropriate response actions required for Parcel 4, and that no further CERCLA response was appropriate to provide protection of human health and the environment. Therefore, EPA deleted Parcel 4 from the NPL on December 2, 2002.

The Phase I Record of Decision (Ref. 18) was approved in 2003. The selected remedy for trichloroethylene (TCE) contamination in Phase I is monitored natural attenuation with ICs.

A no-action Record of Decision for OU-4 (Ref. 12) regarding the soil/sediment in the Miami-Erie Canal was approved in 2004.

## **3.0 Background**

### **3.1 Site Description**

The Mound site is located in Miamisburg, Ohio, approximately 10 mi. southwest of Dayton (Figure 3-1). The original site was comprised of 17 buildings on 182 acres of land. In 1995, the DOE Mound Plant, named after the Miamisburg Indian Mound that is adjacent to the site, was comprised of 120 buildings on 306 acres. The Great Miami River located west of the site flows from northeast to southwest through Miamisburg and dominates the geography of the region surrounding the Mound site.

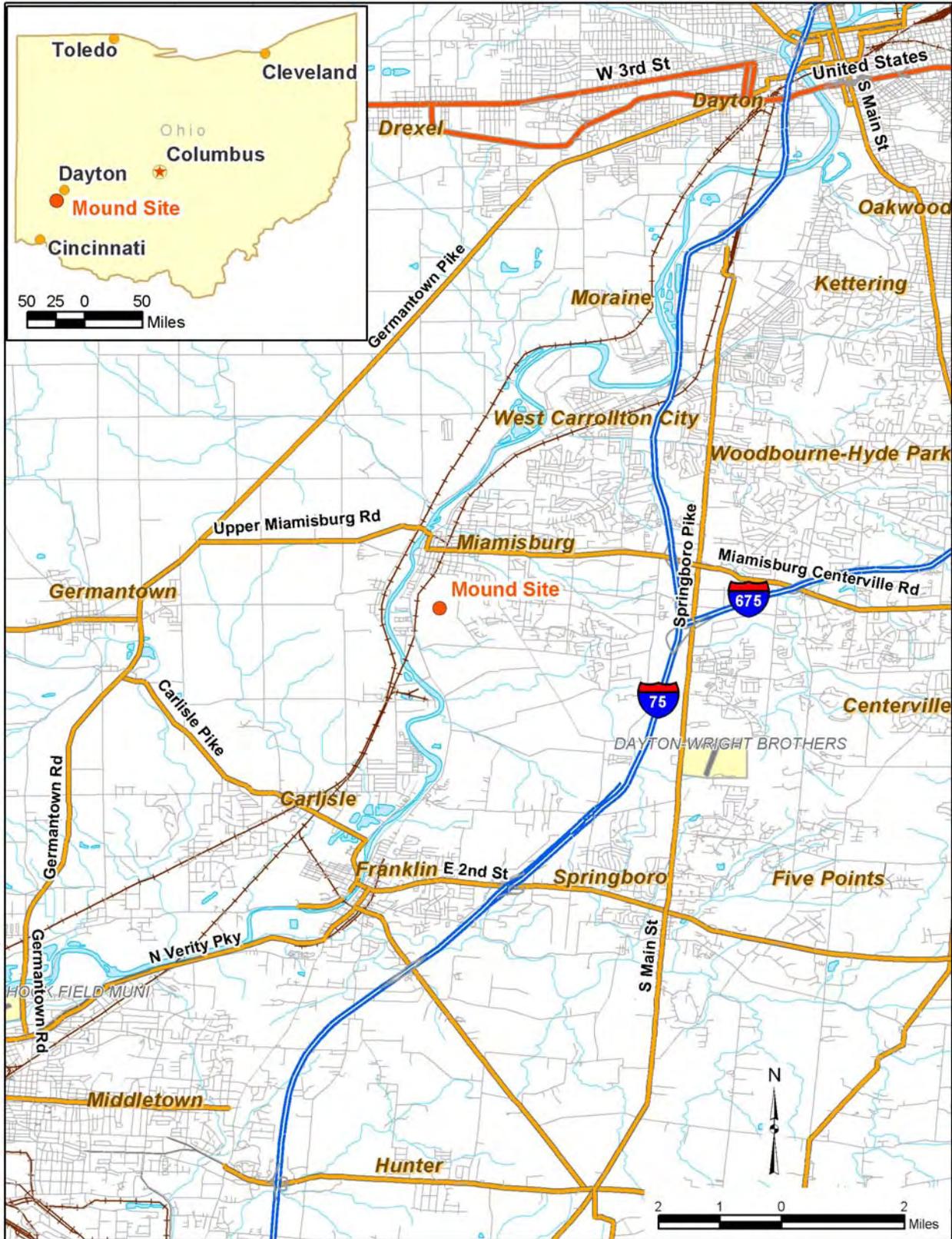
The Mound site sits atop an elevated area overlooking the city of Miamisburg, the Great Miami River, and the river plain area to the west. To the west of the plant is an abandoned section of the Miami-Erie Canal that parallels the river. An intermittent stream runs through the plant valley and drains to the river.

Site elevations vary from 700 ft to 900 ft above sea level; most of the site is above 800 ft. No building in which radioactive material was processed is located below an elevation of 790 ft. The typical non-flood stage of the Great Miami River is 682 ft. The highest floodwater levels that can be reasonably postulated for the Great Miami River basin (100-year storm event) would result in flooding to 700 ft. Parcels H and 4 of the Mound Site lie within the 100-year floodplain of the Great Miami River.

### **3.2 Land and Resource Use**

The river valley is highly industrialized, while the rest of the region is a mix of farmland, residential area, small communities, and light industry. Many city and township residences, five schools, the Miamisburg downtown area, and six of the city's 17 parks are located within 1 mile of the Mound Site.

Population information extracted from the 2000 Census shows that within a 10-mi. radius of the Mound site, there are 340,000 residents, and within a 50-mi. radius of the site, there are 3,127,000 residents. The primary agricultural activity in the area is raising field crops such as corn and soybeans. Approximately 10 percent of the agricultural land is devoted to livestock.



M:\LTS\111\0061\01\S01770\0\S0177000.mxd carverh 4/14/2005 11:18:58 AM

Figure 3-1. Mound, Ohio, Site Location Map

### **3.3 Site History and Enforcement Activities**

#### **3.3.1 History**

The Mound Site was originally established by the Atomic Energy Commission (AEC), a predecessor to DOE, as an integrated research, development, and production facility that supported the nation's weapons and energy programs. To reconfigure and consolidate the nuclear complex, DOE has decided to phase out the defense mission at the Mound Site. As a result, the Mound Site was designated an environmental management site and the plant is in the process of being transferred and converted into a research and industrial/commercial site.

Early programs at the Mound Site investigated the chemical and metallurgical properties of polonium-210 and its applications; particularly, the fabrication of neutron and alpha sources for weapon and non-weapon use. Investigations involving uranium, protactinium-231, and plutonium-239 were performed from 1950 to 1963 as part of the national civilian power reactor program. In 1954, Mound began the separation of stable isotopes.

In the mid-1950s, Mound initiated efforts to develop a large-scale process for the recovery of thorium from a variety of thorium-bearing ores. Even though this project was canceled prior to full-scale operation approximately 1,650 tons of thorium-containing sludge was received at the Mound Site. Due to its corrosivity, the thorium sludge was continually repackaged and relocated. This resulted in a number of thorium-contaminated areas around the site.

Plutonium-238 research and development activity began at the Mound Site in the mid-1950s. From the early 1960s to the late 1970s, Mound processed plutonium-238 for use in heat sources within Radioisotopic Thermal Generators (RTGs). The fabrication of heat sources from plutonium metal was terminated in the mid-1960s. Plutonium oxide processes continued into the late 1970s. After early 1979, Mound did not handle un-encapsulated plutonium-238.

As a result of discovery of volatile organic compounds (VOCs) in groundwater, the Mound Site was placed on the NPL on November 21, 1989. DOE signed a CERCLA Section 120 FFA with EPA, effective October 1990. In 1993, this agreement was modified and expanded to include OEPA.

#### **3.3.2 Enforcement and Agreements - Mound 2000 Process**

DOE, EPA, and OEPA had originally planned to address the environmental restoration issues under a set of OUs, each of which would include a number of Potential Release Sites (PRSs). For each OU, the site would follow the traditional CERCLA process: a Remedial Investigation/Feasibility Study (RI/FS) followed by a ROD, followed by Remedial Design/Remedial Action (RD/RA). After initiating remedial investigations for several OUs, DOE and its regulators realized during a strategic review in 1995 that, for Mound, the OU approach was inefficient. DOE and its regulators agreed that it would be more appropriate to evaluate each PRS or building separately, use removal action authority to remediate them as needed, and establish a goal for no additional remediation other than ICs for the final remedy documented in the ROD. To evaluate any residual risk after all removals have been completed, a

Residual Risk Evaluation (RRE) was to be conducted to ensure the conditions do not pose an unacceptable risk to human health when the parcel is used for industrial/commercial purposes. This process was named the Mound 2000 Process. DOE and its regulators pursued this approach with the understanding that EPA and OEPA reserve all rights to enforce all provisions of the FFA and participation in the Mound 2000 Process does not constitute a waiver of EPA and OEPA rights to enforce the FFA.

The Mound 2000 Process established a “Core Team” consisting of representatives of the DOE Miamisburg Closure Project, EPA, and OEPA. The Core Team evaluates each of the PRSs and recommends the appropriate response. The Core Team uses process knowledge, site visits, and existing data to determine whether or not any action is warranted concerning the PRS. The PRSs at Mound were identified based on knowledge of historical land use that was considered potentially detrimental and/or an actual sampling result showing elevated concentrations of contaminants. If a decision cannot be made, the Core Team identifies specific information needed to make a decision (e.g., data collection, investigations). The Core Team also receives input from technical experts as well as the general public and/or public interest groups. Thus, all stakeholders have the opportunity to express their opinions or suggestions involving each PRS. The details of this process are explained in the *Work Plan for Environmental Restoration at the Mound Plant, The Mound 2000 Approach* (DOE 1999c).

Originally, the Mound property was divided into nineteen “release blocks,” which are contiguous tracts of property designated for transfer of ownership. Release Blocks D and H were transferred to MMCIC in 1999. The remaining release blocks were reconfigured and renamed parcels. Parcel 4 was transferred to MMCIC in 2001. Parcel 3 was transferred to MMCIC in 2002.

The *Mound 2000 Residual Risk Evaluation Methodology* (RREM) (DOE 1997) was developed as a framework for evaluating human health risks associated with residual levels of contamination. The RREM is applied to a parcel once necessary remediation has been completed, and the remaining PRSs or buildings in the parcel have been designated as No Further Assessment (NFA). Once the identified environmental concerns have been adequately addressed by the Core Team, a RRE is performed. The RRE documents whether the parcel is acceptable for industrial/commercial redevelopment.

The ROD will document the most appropriate remedy that meets statutory requirements and ensures protection of human health and the environment.

After the ROD is final, DOE will submit documentation to EPA and OEPA that shows the property meets CERCLA 120 (h) (3) requirements. After concurrence is obtained, the title of the property may be formally transferred. Prior to acceptance of the deed for any discrete parcel, the Buyer shall acknowledge that it has reviewed the Mound environmental reports provided by DOE. Acceptance of the deed thereby acknowledges and commits the Buyer to abiding by ICs specified in the ROD.

### **3.4 Geology and Hydrogeology**

The geologic record preserved in the rocks underlying the site indicates that the area has been relatively stable since the beginning of the Paleozoic era more than 500 million years ago. There is no evidence indicating subsurface structural folding, significant stratigraphic thinning, or subsurface faulting in the underlying bedrock. Limestone, which is interbedded with shale layers, is the uppermost bedrock units at the site. No evidence of solution cavities or cavern development has been observed in any borings or outcrops in the Miamisburg area.

The aquifer system at the Mound site consists of two different hydrogeologic environments: groundwater flow through the bedrock beneath the hills, and groundwater flow within the unconsolidated glacial deposits and alluvium associated within the Buried Valley Aquifer in the Great Miami River valley. The bedrock flow system is dominated by fracture flow and is not considered a highly productive aquifer. The Buried Valley Aquifer is dominated by porous flow with interbedded gravel deposits providing the major pathway for water movement. The unconsolidated deposits are Quaternary Age sediments consisting of both glacial and fluvial deposits. The Buried Valley Aquifer is a highly productive aquifer capable of yielding a significant quantity of water and is designated a sole source aquifer.

End of current text

## 4.0 Remedial Actions

Remedial actions at the Mound site consist of ICs and two groundwater remedies. ICs to control land and groundwater use have been established for all of the parcels and Phase I. ICs to control site access have been outlined for the OU-1 area. Groundwater in Phase I is being addressed using monitored natural attenuation for those contaminants that exceed Maximum Contaminant Levels (MCLs). A pump and treatment system was constructed to control groundwater contamination and to minimize exposure to potential receptors by minimizing migration of contaminated groundwater.

### 4.1 Institutional Controls

ICs represent the all or part of the remedy selected for Parcels D, H, 3, 4 and Phase I (Figure 4-1). ICs are controls that reduce the potential for human exposure to residual contamination. ICs are non-engineered means, such as administrative and/or legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy. Detailed information on ICs applied to these parcels is contained in parcel-specific RODs:

- *Operable Unit 1 Record of Decision* (DOE 1995);
- *Record of Decision, Release Block D* (DOE 1999a);
- *Record of Decision, Release Block H* (DOE 1999b);
- *Parcel 3 Record of Decision* (DOE 2001b); and
- *Parcel 4 Record of Decision* (DOE 2001c).

Ownership of Parcels D, H, 3, and 4 was transferred to MMCIC. As required by public law, DOE declared the parcels as excess and completed the process for property transfer as outlined in CERCLA §120 (h). EPA also approved of the property transfers. The quitclaim deed for each land parcel informs the property owner of the parcel-specific ICs embedded in the deed as deed restrictions. DOE imposed 3 deed restrictions on each parcel. In general terms, the 3 deed restrictions are as follows:

1. Soil cannot be removed from the Mound Site without prior regulatory approval,
2. Groundwater may not be used without prior regulatory approval, and
3. Land use must remain industrial/commercial.

The above 3 deed restrictions remain attached to the land parcel through subsequent property transfers. The quitclaim deed references the *Environmental Summary*, which is the final document prepared under the Mound 2000 process for transfer of property. As an exhibit to the quitclaim deed, the *Environmental Summary* is a critical piece of information that must be passed on to subsequent property owners to ensure that corporate memory is retained on the rationale behind each deed restriction. Recording the quitclaim deed, which includes the *Environmental Summary* with the Montgomery County, Ohio Recorders Office, ensures that future property owners are aware of the deed restrictions associated with the Mound Site. These deed restrictions are used to ensure protection of human health and the environment for as long as residual contamination levels warrant.

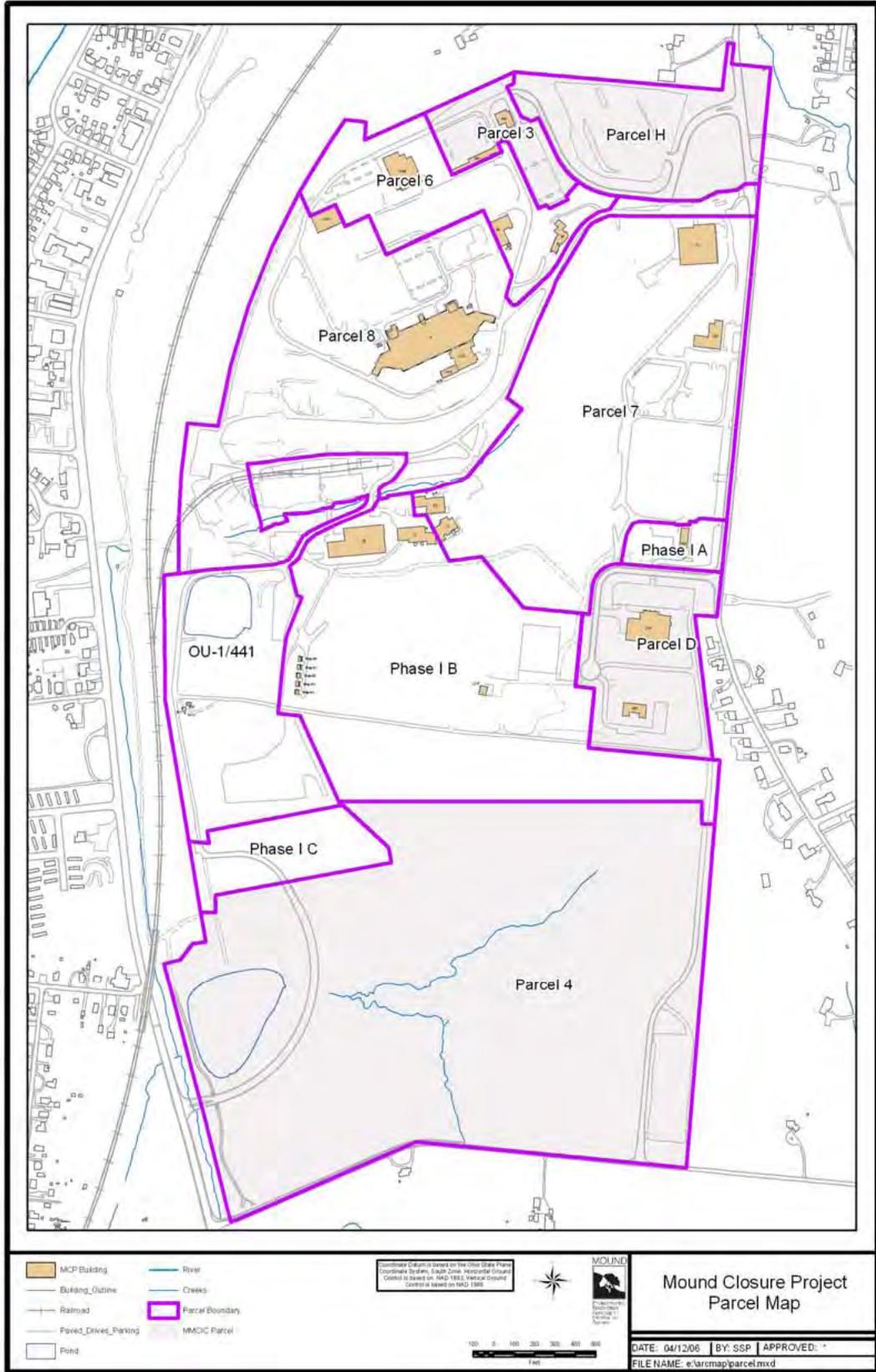


Figure 4-1. Land Parcels at the Mound Plant Site

### 4.1.1 Remedy Selection

ICs were selected as the remedy to protect future occupants or workers. The primary remediation objective is to ensure that the residual risk associated with each parcel/release block is acceptable for the defined use scenario of industrial/commercial occupants. ICs are imposed through deed restrictions on future land use. DOE or its successors, as the lead agency for the Records of Decision, has the responsibility to monitor, maintain, and enforce ICs.

It was determined based on historical information and contaminant data that no additional remedial action of the PRSs in each land parcel was necessary due to the placement of ICs on future land use. Evaluation of residual soil and groundwater contaminants within each land parcel has resulted in a determination that future users of the land will not be exposed to contaminant levels that would pose unacceptable risks as long as compliance with the deed restrictions are maintained. The soil within each land parcel has not been evaluated for any use other than on-site industrial and/or commercial use. Any off-site disposition of the soil from a land parcel without proper handling, sampling, and management could create an unacceptable risk to off-site receptors.

The selected remedy in each land parcel includes ICs in order to maintain protection of human health and the environment in the future. ICs adopted will ensure:

- Maintenance of industrial/commercial land use;
- Prohibition against residential use;
- Prohibition against removal of soils from the DOE Mound property boundary without prior approval from the Ohio Department of Health (ODH), OEPA, and EPA.
- Prohibition against the use of groundwater
- Site access for federal and state agencies for the purpose of sampling and monitoring; and

### 4.1.2 Remedy Implementation

The sales contract between DOE and MMCIC, dated January 23, 1998, establishes that DOE will convey the entire Mound Site by discrete parcels, subject to the CERCLA §120 (h) – *Property Transfer of Federal Agency*. Once regulatory approval is received via approval of the Environmental Summary, each parcel of land is transferred via a quitclaim deed. The quitclaim deed contains or refers to restrictions required under CERCLA to ensure that the parcel being transferred is protective of human health and the environment (i.e., as stipulated in the ROD). Deeds have been recorded for Parcels 3, 4, D, and H. Copies of these deeds are contained in Appendix A.

The preparation of the quitclaim deed, consequently, requires input from the CERCLA process. A copy of the Environmental Summary is also recorded with the deed. The quitclaim deed transfers ownership of the land and establishes that MMCIC will take the land “as is” and “where is.” Although the deed does not contain a warranty for the land, DOE maintains responsibility for cleanup if contamination resulting from previous DOE activities (that pose a risk to human health and the environment) is discovered in the future (Ref. 1).

DOE, the regulators, and MMCIC have agreed that the future land used for the site is industrial and have evaluated two scenarios: commercial worker and construction worker. At closure, the following deed restrictions will be in effect across the entire site and are further discussed in subsequent sections:

- Maintenance of industrial/commercial land use and prohibition of residential use,
- Prohibition against the removal of soils from DOE property (as owned in 1998) without approval from EPA, OEPA, and ODH.
- Prohibition against the use of groundwater,
- Site access for federal and state agencies for the purpose of sampling and monitoring, and

#### ***4.1.2.1 Industrial Land-use***

The third deed restriction prohibits the land use to be anything other than industrial and/or commercial. The Proposed Plan and ROD for each land parcel state that land use will be for industrial and/or commercial use only. The RODs further detail specific land uses that will not be permitted onsite, but the list in the ROD is not meant to be all inclusive. Land parcels may not be used for any residential or farming activities, or any other activities that could result in the chronic exposure of children under 18 years of age to soil or groundwater from the Mound Site.

To date, restricted land uses listed in the RODs include, but are not limited to:

- Single or multi family dwellings or rental units;
- Day care facilities;
- Schools or other educational facilities for children under 18 years of age; and
- Community centers, playgrounds, or other recreational or religious facilities for children less than 18 years of age.

#### ***4.1.2.2 Soils***

The first deed restriction applied to land parcels transferred to date pertains to the removal of soil from the Mound Site without prior written approval from EPA, OEPA, and ODH. The protocol for obtaining approval is contained in Attachment 7 of the *Operations and Maintenance Plan for the Implementation of Institutional Controls at the 1998 Mound Plan Property*. As OEPA is structured today, the decision authority for removal of soil from the Mound Site resides within the Southwest District Office, located in Dayton, Ohio. Information outlined in Attachment 7 should be provided in writing to OEPA and ODH/Bureau of Radiation Protection for each instance of proposed soil volume transport. Information about the cleanup process, background levels, and toxicology data is contained in or referenced in the *Mound 2000 Residual Risk Evaluation Methodology* (DOE 1997).

### **4.1.2.3 Groundwater**

The second deed restriction prohibits the extraction, consumption, exposure or use in any way of the groundwater underlying the premises, without prior written approval. The protocol for obtaining approval to install a groundwater well is contained Attachment 8 in *Operations and Maintenance Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property*. The protocol was developed to assist and inform the public, and future property owners, of the actions needed to request the permission from DOE to use groundwater on the Mound Site. Permission will be based upon a written request to EPA and OEPA.

### **4.1.3 Operations and Maintenance**

ICs comprise all, or part of, the remedy for land parcels at the Mound site that have completed the CERCLA §120 (h) process for property transfer. In general, DOE will assess the effectiveness of ICs applied to the Mound Site on an annual basis. DOE may also, at any time, conduct a review of ICs if there is reason to believe a degradation of any control has occurred. However, the RODs for each parcel state that DOE can petition the regulators to decrease the assessment frequency (e.g., to every 5 years). DOE presents the annual assessment of ICs in an annual report.

The assessment of ICs includes a visual inspection of the site supported with review of aerial photography. A complete description of the assessment of ICs, including a checklist, is contained in the *Operation and Maintenance Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property*. The checklist is in Attachment 6 of the O&M Plan.

## **4.2 Operable Unit 1**

In June 1995, DOE finalized the *Operable Unit 1 Record of Decision* (DOE 1995) to address contaminated groundwater in this discrete portion of the Mound Plant Site. OU-1 is located in the southwestern portion of the Mound Site (Figure 4-2) and encompasses an historical waste disposal area (landfill) and the plant production wells. The OU-1 remedial action was designed to control groundwater contamination (primarily low-level volatile organic compounds), to prevent migration of contamination toward the plant production wells, and to minimize exposure to potential receptors (DOE 2002). The pathway of concern consists of leaching of contaminants from site soils or disposed wastes; entrainment in the groundwater flow; and withdrawal by the Mound Plant production wells or by other future wells. The plant production wells were abandoned in October 2005, when the facility was connected to the municipal water supply.

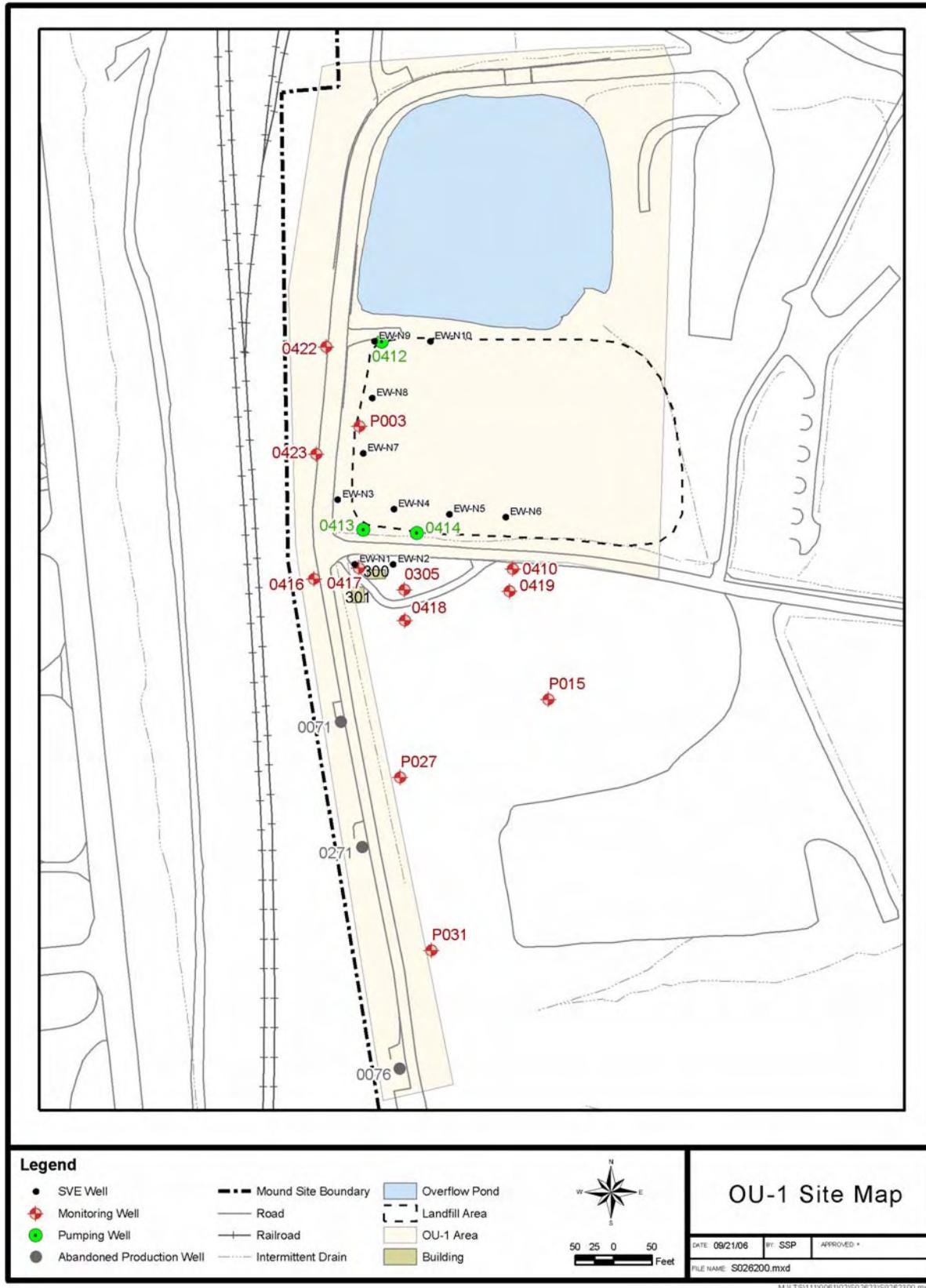


Figure 4-2. Operable Unit 1 Site Map

### 4.2.1 Remedy Selection

The selected remedy for controlling contamination from the soils and groundwater at OU-1 is the collection, treatment, and disposal of groundwater. Surface water controls, ICs to limit site access, and long-term groundwater monitoring are also part of the remedy (DOE 1995). This action is being implemented through the collection and treatment of contaminated groundwater and discharge of the treated water. The chemical properties and hydraulic behavior of the groundwater system are monitored to verify the adequacy of the remedy. The major components of this remedy include:

- Extraction of groundwater using 3 conventional wells;
- Treatment of the extracted groundwater to remove the VOCs using air stripping;
- Discharge of the treated groundwater to the Great Miami River;
- Monitoring of the chemical properties of the groundwater system;
- Monitoring of the hydraulic behavior of the groundwater system; and
- Monitoring of the discharge effluent.
- Periodic testing of the OU-1 extraction system (rebound testing).

The remedy also included surface water controls, the implementation of ICs to limit access to the site, and long-term groundwater monitoring. Surface water controls were installed to manage the surface water run-on and run-off and to reduce infiltration into the wastes in the landfill. ICs will be implemented that control land and groundwater use and will be incorporated into deed restrictions developed when ownership of OU-1 transfers. Access restrictions and fencing have been implemented to minimize contact with the soils until such time as the property transfers.

### 4.2.2 Remedy Implementation

The majority of the activities and components of the OU-1 remedial action were discussed in the previous Five-Year Review (DOE 2001a). The components of the remedy that have been ongoing since the time of the last review are groundwater extraction, treatment, and discharge, groundwater monitoring for chemical and hydraulic behavior, and monitoring of the discharge effluent.

Sampling of selected groundwater monitoring wells for volatile organic compounds is performed quarterly as specified in Section 8 of the *OU-1 Pump and Treatment Operation and Maintenance Plan* (DOE 2000). Table 4-1 summarizes the current monitoring network, which is smaller than that specified in the O&M plan. Reduction in the monitoring network is the result of decommissioning of wells in the OU-1 area. Data are analyzed to determine sustained downward trends as proof of successful capture of the plume. In accordance with the *OU-1 Pump and Treatment Operation and Maintenance Plan*, OEPA is notified prior to collection of groundwater samples and measuring water levels in the selected well.

Table 4-1. Groundwater and Hydraulic Monitoring for OU-1

Location	VOC Analysis	Groundwater Hydraulic Measurement	Location	VOC Analysis	Groundwater Hydraulic Measurement
0305	X	X	0422		X
0410	X	X	0423		X
0416	X		P003		X
0417	X	X	P015	X	
0418	X		P027	X	
0419	X		P031	X	

Closely related to the operation of the system is the measurement of groundwater elevations in the OU-1 area, which are used to verify the satisfactory function of the pumping system. Head measurements are made within the treatment area as specified in Section 8 of the *OU-1 Pump and Treatment Operation and Maintenance Plan* (DOE 2000). Section 8 outlines that head measurements are made using a network of 16 wells. It was later determined that hydraulic capture could be determined through the use of a small network of wells located on the compliance boundaries (Table 4-1).

Since the last Five-Year Review, surface water controls have been constructed and access to the OU-1 landfill has been restricted. Existing ditches were upgraded and new ditches were constructed to prevent run-on of precipitation and to divert run-off to the surface water retention basin located adjacent to the northern boundary of the OU-1 landfill. A temporary fence was installed around the OU-1 landfill to restrict access to the area during soil remediation activities. Prior to soil excavation, the site fence was considered to be adequate access restriction to the area.

#### 4.2.3 Operations and Maintenance

O&M requirements are documented in the *OU-1 Pump and Treatment Operational and Maintenance Plan* (DOE 2000).

### 4.3 Phase I Groundwater (MNA) Remedy

The *Phase I Record of Decision* (DOE 2003a) was finalized in July 2003 to address groundwater contaminated with TCE in this discrete area through monitored natural attenuation (MNA) and ICs. Phase I is an approximately 52 acre area and lies on the southern border of the plant and is made up of three distinct sections of the site property (Figure 4-3). This area contains monitoring wells that are screened in both the Buried Valley Aquifer (BVA) and the bedrock aquifer system. MNA is being utilized as a remedy for a small section of the bedrock groundwater system contaminated with TCE to ensure the concentration of TCE within the bedrock groundwater is decreasing to levels below the MCL and does not impact the downgradient BVA.

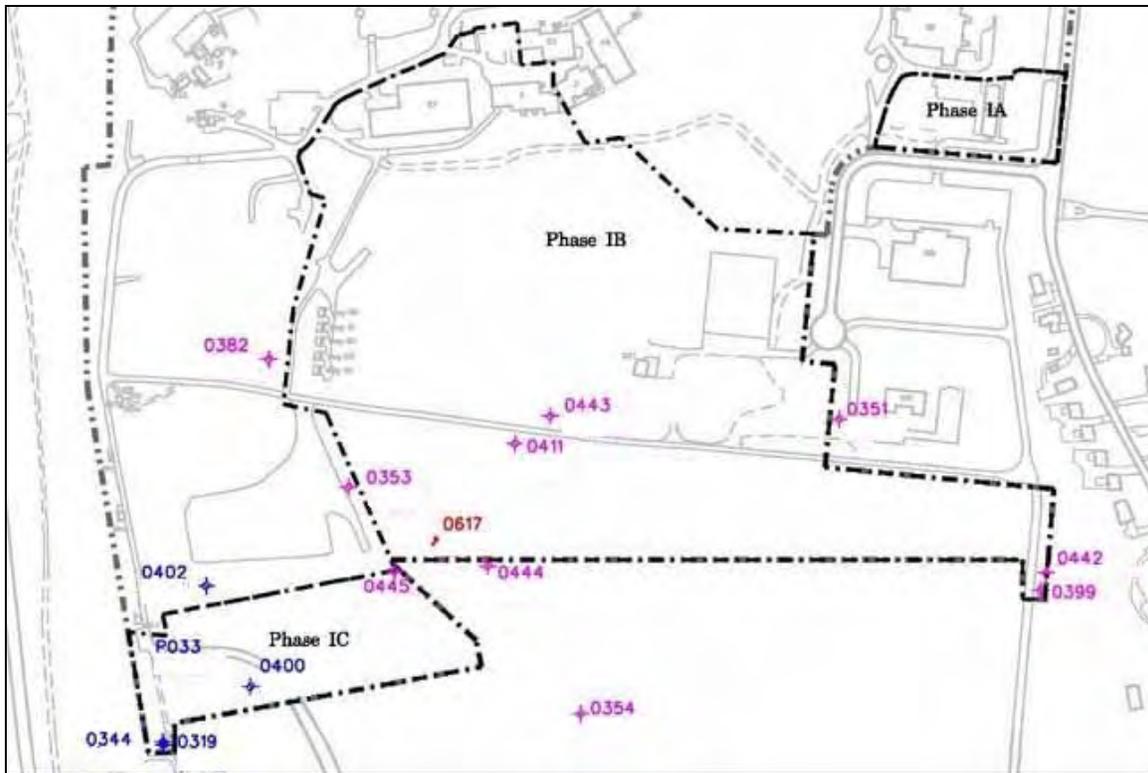


Figure 4-3. Monitoring Network for Phase I Groundwater (MNA) Remedy

Several wells in this area also exhibit levels of barium, radium (Ra), chromium, and/or nickel that exceed MCLs established under the Safe Drinking Water Act (SDWA). The elevated levels of barium and radium were evaluated and determined to be naturally occurring with the local bedrock matrix serving as the mineral source. The elevated chromium and nickel were determined to be the result of corrosion of the stainless steel well casings. DOE has committed to monitor select wells to confirm the results of the previous investigations where these conclusions were reached.

ICs associated with Phase I are discussed in Section 4.1.

#### 4.3.1 Remedy Selection

DOE will monitor groundwater in Phase I for TCE and its degradation products to verify that the concentration of TCE is decreasing due to natural attenuation and is not impacting the BVA. A groundwater monitoring program was established to ensure that the BVA is not negatively impacted by TCE contaminated groundwater within the Phase I bedrock aquifer system. The objective of this monitoring is to protect the BVA by verifying that the concentration of TCE in the vicinity of Wells 0411, 0443, and Seep 0617 are decreasing and that TCE is not impacting the BVA. This program may be decreased or terminated with the TCE concentrations observed in 0411, 0443, and Seep 0617 meet the MCL for four consecutive sampling events.

Although not part of the selected remedy, monitoring is performed to evaluate barium, radium, chromium, and nickel impact in the Phase I groundwater. Based on investigations, none of these parameters were considered to be contaminant of concern in Phase I.

Monitoring of groundwater for barium, Ra-226, and Ra-228 is performed to provide assurance that the understanding of the barium and radium in groundwater is correct. If monitoring indicates that the concentrations are not decreasing below the MCL within a reasonable timeframe, the need for an active remediation for these contaminants or additional characterization will be considered. It was concluded from investigations in this area that a salt source located on the surface leached into the bedrock formation dissolving naturally occurring barium and radium in a low flow area of the bedrock aquifer. The salt storage shed was taken out of use.

Nickel and chromium concentrations observed in Wells 0319, 0399, 0400, and 0411 are likely the result of corrosion of the stainless steel well casings and not the result of plant operations. Monitoring is performed to obtain a more comprehensive set of data to support this conclusion. When four consecutive quarters of steady or decreasing nickel and chromium concentrations are collected, monitoring for nickel and chromium can be discontinued.

#### 4.3.2 Remedy Implementation

Under the MNA monitoring program, samples are collected quarterly for selected wells and seeps and analyzed as outlined in Section 4.3 of the *Phase I Groundwater Monitoring Plan* (DOE 2004a) and in Table 4-2, below.

Table 4-2. Remedy (MNA) Monitoring for Phase I

Monitoring Location	Area	Parameters
Well 0411	Well 0411 Area	Trichloroethylene (TCE) Dichloroethylene (DCE) Vinyl Chloride (VC)
Well 0443		
Well 0353	Downgradient Bedrock Monitoring	
Well 0444		
Well 0445		
Seep 0617		
Well 0400	Downgradient Buried Valley Aquifer Monitoring	
Well 0402		
Well P033		

Confirmatory sampling to support the barium, radium, nickel, and chromium impact are collected quarterly for selected wells as outlined in Table 4-3.

Table 4-3. Confirmatory Monitoring for Phase I

Monitoring Location	Parameters
0319	Chromium, Nickel, Sodium, Chloride
0400	Barium, Ra-226, Ra-228, Chromium, Nickel, Sodium, Chloride
0402	Barium, Ra-226, Ra-228, Sodium, Chloride
0442	Chromium, Nickel, Sodium, Chloride
0443	Chromium, Nickel, Sodium, Chloride
0445	Barium, Ra-226, Ra-228, Sodium, Chloride
P033	Barium, Ra-226, Ra-228, Sodium, Chloride

The contaminant data is evaluated against previous data collected at each location to determine if MNA is adequately addressing groundwater impact and to monitor the geochemical conditions in the aquifer. Trigger levels and response actions have been established for each contaminant as presented in the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. The triggers are summarized in Table 4-4.

Table 4-4. Trigger Levels for Phase I MNA Remedy

Location	TCE (µg/L)	DCE (µg/L)	VC (µg/L)	Ra-226/228 (pCi/L)	Barium (mg/L)	Chromium (µg/L)	Nickel (µg/L)
0319	---	---	---	---	---	100	100
0353	5	70	2	---	---	---	---
0400	5	70	2	5	1	100	100
0402	5	70	2	5	1	---	---
0441	30	70	2	---	---	---	---
0442	---	---	---	---	---	100	100
0443	30	70	2	---	---	100	100
0444	5	70	2	---	---	---	---
0445	5	70	2	75	---	---	---
P033	5	70	2	5	1	---	---
0617 (seep)	16	70	2	---	---	---	---

Exceedence of these trigger levels requires notification to the Federal and State EPA. After notification, the Core Team (EPA, OEPA, and DOE) will determine an appropriate course of action.

### 4.3.3 Operations and Maintenance

The program to support MNA for the groundwater in Phase I is documented in the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan* (DOE 2004a). ICs are evaluated in accordance with the *Operations and Maintenance Plan for the Implementation of Institutional controls at the 1998 Mound Plant Property* (DOE 2003b).

End of current text

## **5.0 Progress Since Last Review**

### **5.1 Institutional Controls**

The first ROD to stipulate ICs was in 1999. This ROD required annual reviews of the IC remedy at Release Block D. Six annual reports have been prepared assessing the adequacy of ICs for the transferred parcels, since that time. These reports were reviewed as part of this Five-Year Review.

It was discussed in the previous Five-Year Review report (DOE 2001a) that RODs for 3 land parcels (D, H, and 4) had been finalized and the parcels transferred to MMCIC. Little discussion regarding the status of ICs was provided in the first report other than noting that the recent RODs for these areas had been recently evaluated in the first annual review report for the implementation of ICs that was submitted in June 2001.

Since the previous Five-Year Review, RODs have been finalized for 2 additional properties (Parcel 3 and Phase I) that contain ICs. Parcel 3 has been transferred to MMCIC; however, Phase I has not been transferred. Annual inspections and reports have been prepared each year, as required.

### **5.2 Operable Unit 1**

#### **5.2.1 Protectiveness Statement from Last Review**

Based on the information available at the time of this review, the remedy for OU-1 remains protective of human health and the environment.

#### **5.2.2 Status of Recommendations from Last Review**

Recommendations from the last review were to:

- Continue the pump and treat operations; and
- Perform a rebound test when criteria were met.

The OU-1 pump and treatment system continued operation except from May 2003 through February 2004 when a rebound test was performed. This test is discussed in Section 6.7.1.6.

### 5.2.3 Status of Other Prior Issues

A technical evaluation of OU-1 was performed during 2003 and 2004 to discuss additional information discovered since the time of the OU-1 ROD and the concerns that this information produced. The following were topics evaluated:

- The discovery of thorium contaminated soil and wastes,
- The uncertainty in potential OU-1 source terms, and
- The development of the OU-1 ROD prior to the implementation of the Mound 2000 decision-making process and the evaluation of PRSs with respect to the remainder of the Mound Site.

A technical working group consisting of representatives of DOE, EPA, OEPA, the City of Miamisburg, MMCIC, and Miamisburg Environmental Safety and Health (MESH). This team identified and evaluated uncertainties in site conditions, technology performance, and regulatory requirements and developed recommendations/options on how best to address the above-stated topics. The OU-1 evaluation included several PRSs that were not originally evaluated during the OU-1 ROD because either the sites had not been identified at the time of the ROD or they were located outside the OU-1 compliance boundary. These additional PRSs were evaluated to determine whether they could potentially impact groundwater and therefore the current OU-1 remedy.

The recommendations from each organization were compiled and presented in the *Operable Unit 1 (OU-1) Technical Team Evaluation – Recommendations to the Mound Core Team* (DOE 2004d). The recommendations were not a consensus of the technical team, but rather an assemblage of each member's concerns and issues that the Core Team should consider.

Based on the recommendations, the Core Team agreed to perform field investigations to assess the site sanitary landfill and cover and the historic landfill. The results of the investigation indicated that no leachate was present in the leachate collection system in the sanitary landfill. The overflow pond was drained and the sediments sampled to further assess the OU-1 area. The results of the sampling supported the previous determination that no further action was necessary in the overflow pond area.

The area of polonium and thorium contaminated soil and waste was further characterized. The data supported the excavation of some of these wastes and soil. Excavation of these materials was completed in 2005. Backfill and restoration were completed in 2006. Approximately 14, 978 cubic yards of contaminated soil and debris were excavated from the area.

Additional excavation in the OU-1 area is being planned to facilitate economic redevelopment. It is expected that after completion of the activities, all remaining soil portions of the OU-1 area will be addressed in an amendment to the OU-1 ROD.

The groundwater impact south of the OU-1 area (PRS 414) is considered an extension of the OU-1 groundwater plume. The Core Team determined that this impact is addressed through the implementation of the OU-1 remedy. The Core Team retired PRS 414 as a PRS in 2005.

### **5.3 Phase I Groundwater (MNA) Remedy**

The remedy for Phase I was implemented in 2003, making this the first review of the Phase I Remedy. Two annual reports have been prepared summarizing the data for the MNA remedy. These reports were reviewed as part of this Five-Year Review.

### **5.4 Operable Unit 4 – Miami-Erie Canal**

A no action ROD was approved for the soil in the Miami-Erie canal in 2004. The Miami-Erie canal was never owned by DOE; however, the canal was included on the NPL due to impact from operational and accidental releases from the facility. No property transfer was necessary. As this was a no action ROD, further evaluation was not performed for this Five-Year Review report.

End of current text

## **6.0 Five-Year Review Process**

### **6.1 Administrative Components of the Five-Year Review**

The Five-Year Review process for the Mound Site began in January 2006 and continued through August 2006. The Five-Year Review process included notifying regulatory agencies, the community, and other interested parties of the start of the Five-Year Review; establishing the review team in consultation with EPA and OEPA; reviewing relevant documents and data; conducting site inspections; and developing and reviewing this second Five-Year Review Report. Each of these elements is discussed below.

EPA and OEPA were informed that the Five-Year Review process had begun on February 16, 2006, which notified them of the annual ICs inspection that was to take place on February 22, 2006. The notice also stated that the annual IC inspection would also serve as part of the Five-Year Review inspection, in preparation for the Five-Year Review report due in 2006. During the annual inspection, the Five-Year Review was discussed.

The Five-Year Review Team consisted of the following members: Art Kleinrath, DOE; Rebecca Cato, SM Stoller, Corp.; Karen Williams, SM Stoller, Corp.; Joyce Massie, SM Stoller, Corp., Tim Fischer, EPA-Region 5; and Brian Nickel, OEPA.

### **6.2 Community Notification and Involvement**

During the annual inspection for the assessment of ICs at the Mound Site, performed in February 2006, representatives of the City of Miamisburg and MMCIC accompanied the review team. Also, personnel from both organizations were interviewed during the records review portion of the IC assessment during each annual review.

### **6.3 Interviews and Record Review**

During each annual assessment of ICs at the Mound site, DOE conducted interviews with representative of the City of Miamisburg Departments of Engineering and Planning. Review of permits with these departments indicated that all work performed by MMCIC or other parties during the reporting period appeared to be covered by permits submitted to the City.

In general, the permit review process demonstrated that the City of Miamisburg maintains an adequate record keeping system. All work performed by MMCIC or other parties on the Mound Site that DOE and the City were cognizant of during each 12-month reporting period appeared to be covered by permits submitted to the City. The City implemented an electronic permits database system in 2002 that allows permits to be queried via key word searches.

## 6.4 Site Inspections

The assessment of ICs consists of a physical walk-over inspection of those parcels that have completed the CERCLA 120(h) requirements for property transfer and discussions with property owners and a review of any record maintained by DOE, the property owner, and the City of Miamisburg Engineering and Planning Departments. During the visual inspection, DOE will determine if new facilities have been constructed, if obvious improvements have been made to the property, and/or if property usage may have changed. These visual inspections are typically performed by a group comprised of DOE, EPA, OEPA, the City of Miamisburg, and MMCIC. Discussions with local government offices and records review will include, at a minimum, contacting the City of Miamisburg Engineering and Planning Departments to obtain information regarding construction or building permits, or exemptions from zoning ordinances, issued for properties that comprise the former DOE Mound Site. The following is a general discussion of each annual inspection. A more detailed discussion can be found in the appropriate report submitted for each inspection.

### 6.4.1 2002 Annual Inspection

The 2002 report covers Parcels D, H, and 4, which were inspected on May 21, 2002. There were no observations of non-compliance with ICs in Parcels D, H, and 4. Site improvements included the installation of an underground telecommunications conduit in Parcel D and the installation of a new asphalt berm and metal/concrete bumpers around the two telecommunications fixtures installed in 2001. In Parcel 4 there were many changes to the topography and access to the parcel. MMCIC had built a stormwater retention pond on the southwest side of the parcel and a new telecommunications utility cabinet had been installed. MMCIC had also constructed a road (Vanguard Blvd) off of Old State Route 25. This construction included a new entrance and bridge to access Parcel 4. The road construction was not complete. Soil excavated during these projects had been transported throughout the parcel using internal haul roads. Wells that were present in each Parcel were also inspected to document their condition.

It was concluded in the *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property, June 2002* (DOE 2002) that ICs for Parcels D, H, and 4 continued to function as designed, adequate oversight mechanisms appeared to be in place to identify possible violations of ICs, and adequate resources were available to correct or mitigate any problems in the event that a violation were to have occurred. It was recommended as a result of this inspection that a formal check-list be developed to facilitate the walk-over inspections, as well as interview and record reviews

### 6.4.2 2003 Annual Inspection

The 2003 report covers Parcels D, H, 3, and 4, which were inspected on May 21, 2003. There were no observations of non-compliance with ICs in Parcels D, H, and 4. Minor improvements were noted in Parcel D that included the installation of utilities to Building 102. In Parcel 4, it was noted that an area had been clear cut and trenching had occurred. It was later determined that a fiber optic line had been installed by MMCIC; however, this installation did not require a permit since the installation did not occur in the public right-of-way. MMCIC instituted

mechanisms to ensure that excavation work performed outside the public right-of-way comply with ICs (primarily the removal of soil for the former Mound Plant property). No new improvements were noted in Parcels H and 3. Wells that were present in each Parcel were also inspected to document their condition.

To assist in maintaining ICs, MMCIC ensured that all parties performing work on behalf of MMCIC were aware of, and subject to compliance with ICs. MMCIC accomplished this by embedding the following language into the technical requirements of all Requests for Proposal and Work Orders:

*Excavated soils must be managed and remain on MMCIC property. Soils from excavations shall be placed at an on-site location, as directed by MMCIC.*

It was concluded in the *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property, June 2003* (DOE 2003d) that ICs for Parcels D, H, 3, and 4 continued to function as designed, adequate oversight mechanisms appeared to be in place to identify possible violations of ICs, and adequate resources were available to correct or mitigate any problems in the event that a violation were to have occurred. It was recommended as a result of this inspection that wells that will continue to be monitored long-term should have labels/numbers that allow for easy identification of each well in the field. Also, well collars should be maintained in a manner that prevents surface water from entering the well casing. These recommendations were considered to be best management practice and were not related to the effectiveness of the CERCLA remedy for ICs.

### **6.4.3 2004 Annual Inspection**

The 2004 report covers Parcels D, H, 3, and 4 and Phase I (parts A, B, and C), which were inspected on March 15, 2004. MMCIC is the property owner of Parcels D, H, 3, and 4; however, DOE still owns Phase I. There were no observations of non-compliance with ICs in Parcels D, H, 3, and 4 and Phase I. No new improvements were noted in Parcels D, H, and 3 and Phase I. Substantial changes were observed in Parcel 4. MMCIC built a building south of Vanguard Blvd near the entrance at Old State Route 25. Prior to initiating construction, the building was proved with a pre-construction package that included a description of ICs associated with Parcel 4 to ensure that the building was aware that soils could not be removed from the site.

The groundwater monitoring wells and seep associated with the Phase I groundwater remedy were also inspected during this walk-over. The condition of the wells outlined in the *Phase I Groundwater (MNA) Remedy Sampling Plan* was adequate. Excessive vegetation was noted around several wells. Permanent markers were noted on the majority of wells, except 0442, 0445, and P033.

It was concluded in the *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property, July 2004* (DOE 2004e) that ICs for Parcels D, H, 3, and 4 and Phase I continued to function as designed, adequate oversight mechanisms appeared to be in place to identify possible violations of ICs, and adequate resources were available to correct or mitigate any problems in the event that a violation were to have occurred. It was recommended for this inspection that temporary barriers be placed around Well 0400 to prevent it from being damaged by lawn equipment. These recommendations were considered to be best management practice and were not related to the effectiveness of the CERCLA remedy for ICs.

#### **6.4.4 2005 Annual Inspection**

The 2005 report covers Parcels D, H, 3, and 4 and Phase I (parts A, B, and C), which were inspected on June 15, 2005. MMCIC is the property owner of Parcels D, H, 3, and 4; however, DOE still owns Phase I. There were no observations of non-compliance with ICs in Parcels D, H, 3, and 4 and Phase I. No new improvements were noted in Parcels D, H, and 3 and Phase I. An IC violation was observed on June 23, 2005 when teenagers were observed fishing in the retention pond located in Parcel 4. Four signs were installed around this pond that state “Recreational Use Prohibited” to inform people that the pond is not intended for uses such as fishing or swimming. These signs were installed when people were observed fishing in the pond during June 2004. New improvements observed in Parcel 4 included the installation of sidewalks along the southern boundary of the parcel that cuts off access to the old construction entrance to the Mound Site.

The groundwater monitoring wells and seep associated with the Phase I groundwater remedy were also inspected during this walk-over. The condition of the wells outlined in the *Phase I Groundwater (MNA) Remedy Sampling Plan* was adequate, with the exception of Well 0353, which was unlocked and the paint was peeling off the protective casing. Excessive vegetation was observed around several wells. Permanent markers were noted on the majority of wells, except 0442, 0445, and P033.

It was concluded in the *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property, July 2005* (DOE 2005b) that ICs for Parcels D, H, and 3 and Phase I continued to function as designed, adequate oversight mechanisms appeared to be in place to identify possible violations of ICs, and adequate resources were available to correct or mitigate any problems in the event that a violation were to have occurred. ICs for Parcel 4 do not appear to be effective. The area has been utilized in a manner inconsistent with industrial/commercial land use. The use of the retention pond for recreational use is not allowed. It was recommended as a result of this inspection that MMCIC needs to develop and place signs that contain more warnings to the public that will prevent recreational use of the retention pond, as the current signs are not effective.

## 6.4.5 2006 Inspections

Two walk-over inspections were performed in 2006 to support the Five-Year Review for the Mound Site. These inspections are summarized in the following sections. The Site Inspection Checklist for the review of ICs, the Phase I groundwater remedy, and the OU-1 remedy are contained in Appendix B. Photographs from the walkovers performed for this review are contained in Appendix C.

### 6.4.5.1 Institutional Controls Inspection

The Mound Site was inspected on February 22, 2006 in accordance with the *Operations and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property* and associated inspection checklist. The Five-Year Review Checklist was also used during this site inspection. Representatives of the EPA, OEPA, MMCIC, and the City of Miamisburg participated in the inspection. This inspection also served as part of the Five-Year Review inspection to support the Site's CERCLA Five-Year Review Report.

The 2006 report covers Parcels D, H, 3, and 4 and Phase I (parts A, B, and C), which were inspected on February 22, 2006. MMCIC is the property owner of Parcels D, H, 3, and 4; however, DOE still owns Phase I. There were no observations of non-compliance with ICs in Parcels D, H, 3, and 4 and Phase I. No new improvements were noted in Parcels D, H, 3 and 4 and Phase I.

It was concluded in the *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property, June 2006* (DOE 2006d) that ICs for Parcels D, H, and 3 and Phase I continued to function as designed, adequate oversight mechanisms appeared to be in place to identify possible violations of ICs, and adequate resources were available to correct or mitigate any problems in the event that a violation were to have occurred. The recommendation for signage changes in 2005 has not been implemented. The area remains with the same issues of certainty that were identified in 2005. No recommendations significant to the protectiveness of the remedies were made as a result of this inspection.

### 6.4.5.2 Phase I Groundwater

Also, during the walk-over of the Phase I area, the eight groundwater monitoring wells and seep that are included in the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan* were also inspected. Though not necessary to the protectiveness of the remedy, but as best management practice, the condition of the monitoring wells needs to be improved. The protective casings and concrete pads are in disrepair and many do not have adequate protection (i.e., bollards) from vehicular traffic. Excessive vegetation is present around all the monitoring wells and the seep. Permanent identification markers are missing from Wells 0442, 0445, and P033.

### 6.4.5.3 OU-1 Landfill

The Operable Unit 1 area of the site was inspected by S.M. Stoller personnel on July 13, 2006. This walk over consisted of a visual survey of the physical aspects of the OU-1 remedy and included the landfill area, stormwater controls, site fencing, and the OU-1 Pump and Treatment/Soil Vapor Extraction system. This inspection was performed using the CERCLA Five-Year Review Checklist.

The general condition of the OU-1 area is adequate. Removal actions in the landfill area were completed this year and vegetation has not been fully restored. Access roads are in minor disrepair, but are accessible for inspection of the OU-1 area and operation of the treatment system and stormwater controls.

Access and ICs associated with OU-1 consist of fencing around the landfill proper. This fencing is temporary in nature, meaning that it is free standing and not permanently installed with posts secured in concrete. The fencing was in good condition and extended around the complete perimeter of the landfill area.

The landfill cover is in satisfactory condition. Several small trees were observed on the northern side of the landfill cover. No evidence of slope instability was observed. The southwestern corner of the landfill shows the effects of the recent removal action performed in that area. The area appears to be graded in a fashion to prevent the ponding of water. As note previously, vegetation has not been completely established on the recently excavated areas.

Stormwater run-on and run-off is controlled along the edges of the landfill using swales and ditches. Stormwater along the eastern side of the landfill is directed to the stormwater retention basin on the northern side of the landfill. Although vegetation is present in the swales along the eastern side of the landfill, stormwater flow is not impeded. The stormwater retention basin appears to be functioning adequately. The overflow structure was in good condition. Stormwater from this area is monitored in accordance with National Pollutant Discharge Elimination System (NPDES) permit 11O00005\*ID.

Stormwater along the western side of the landfill is control by concrete lined ditches that discharge to the south and flow beneath the access road near Buildings 300 and 301. Excessive vegetation is present in the ditch that could lead to deterioration of the concrete and impede surface water flow in the future. The drainage in this area has also been impeded by site remediation activities that have resulted in a reduction or elimination of the ditch south of this area. Ponding water was observed in the southwestern corner of the landfill area.

During the walk-over of the OU-1 area, the groundwater monitoring wells that are included in the *OU-1 Pump and Treatment Operations and Maintenance Plan* were also inspected. Though not necessary to the protectiveness of the remedy, but as best management practice, the condition of the monitoring wells needs to be improved. The protective casings and concrete pads are in disrepair and many do not have adequate protect (i.e., bollards) from vehicular traffic. Excessive vegetation is present around all the monitoring wells.

#### **6.4.5.4 OU-1 Pump and Treatment System**

The OU-1 Pump and Treatment system is composed of 3 extraction Wells (0412, 0413, and 0414) located along the southern and western edge of the landfill area that create a hydraulic barrier to prevent the migration of VOC impacted groundwater. Water extracted from the 3 extraction wells is directed to Building 300 where VOC contamination is removed using an air stripping system. The effluent from this system is monitored and discharged in accordance with the CERCLA Authorization to Discharge (ATD) under NPDES (Authorization Number 1IN90010\*BD). Visual inspection of the physical components of the treatment system indicates that the building and system is in good condition. The area around Building 300 is in minor disrepair, primarily poor housekeeping. The 3 extraction wells are in minor disrepair, mainly as a result of the previous excavation activities performed in the landfill area.

A soil vapor extraction (SVE) system was added to the pump and treat system in 1997 and consists of 23 vapor extraction wells installed along the western and southern side of the landfill. During excavation activities in 2005, some of the vapor extraction wells were removed and were not re-installed upon site restoration. The system presently consists of 10 vapor extraction wells. The vacuum pumps are housed in Building 301. Emissions from the system are considered de minimis and no monitoring is required. Visual inspection of the physical components of the treatment system indicates that the building and system are in good condition. The area around Building 301 and the SVE wells are in minor disrepair, primarily poor housekeeping. Excessive vegetation is present around the SVE wells on the western side of the landfill.

### **6.5 Document Review**

The following sections list the documents that were reviewed as part of this Five-Year Review. The documents are categorized into the following:

#### **6.5.1 Basis for Response Action**

The documents listed in Table 6-1 identify the background and goals of the remedies and any changes in laws and regulations that may affect the response action. These documents also provide background information on the remedial actions, basis for action, cleanup levels, applicable or relevant and appropriate requirements (ARARs), and address community concerns and preferences.

Table 6-1. Documents Supporting Basis for Response Action at the Mound Site

Document	Purpose	Use for Review
Record of Decision for Release Block D, Mound Plant, Miamisburg, Ohio, February 1999	Record selected remedial decision	Remediation Goals Background Basis for Action Community Concerns ICs ARARs
Record of Decision for Release Block H, Mound Plant, Miamisburg, Ohio, June 1999	Record selected remedial decision	Remediation Goals Background Basis for Action Community Concerns ICs ARARs
Parcel 4 Record of Decision, Mound Plant, Miamisburg, Ohio, February 2001	Record selected remedial decision	Remediation Goals Background Basis for Action Community Concerns ICs ARARs
Parcel 3 Record of Decision, Mound Plant, Miamisburg, Ohio, September 2001	Record selected remedial decision	Remediation Goals Background Basis for Action Community Concerns ICs ARARs
Operable Unit 1 Record of Decision, Mound Plant, Miamisburg, Ohio, June 1995	Record selected remedial decision	Remediation Goals Background Basis for Action Community Concerns Cleanup Levels Operational Criteria ICs ARARs
Phase I Record of Decision, Miamisburg Closure Project, July 2003	Record selected remedial decision	Remediation Goals Background Basis for Action Community Concerns Cleanup Levels ICs ARARs
Miami-Erie Canal Record of Decision, Miamisburg Closure Project, September 2004	Record selected remedial decision	Background Basis for Action Community Concerns ARARs

## 6.5.2 Implementation of the Response

The documents listed in Table 6-2 furnish information about design assumptions, design plans or modifications and documentation of the response at the site.

Table 6-2. Documents Supporting Implementation of the Response at the Mound Site

Document	Purpose	Use for Review
Final Report on the Implementation of Operable Unit 1 Record of Decision	Documents the approach used to evaluate hydraulic capture for OU-1 pump and treat (P&T)	Data evaluation

## 6.5.2 Operations and Maintenance

O&M documents listed in Table 6-3 describe the ongoing measures at a site to ensure the remedy remains protective. They provide the structure for O&M at the site and confirm that O&M is proceeding as planned.

*Table 6-3. Documents Supporting Operations and Maintenance at the Mound Site*

<b>Document</b>	<b>Purpose</b>	<b>Use for Review</b>
OU-1 Pump and Treatment Operational and Maintenance Plan, March 2000	Provides the general guidelines for effective operation of the pump and treatment system.	O&M Requirements Monitoring Requirements Reporting
Operational and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property, 2004	Provides the details for the implementation of ICs for all parcels/phases at the Mound Site and the process for evaluation of the effectiveness of ICs	O&M Requirements Reporting
Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan, September 2004	Provides the groundwater monitoring approach for the MNA remedy in Phase I	Monitoring Requirements Reporting
Long-Term Surveillance and Maintenance Plan for the U.S. Department of Energy Miamisburg Closure Project, Mound Site, Miamisburg, Ohio, Vol. 1 (Draft), September 2005	Provides a summary of activities and operations that are required to maintain the selected CERCLA remedial actions and ensure the effectiveness of the remedies.	O&M Requirements Commitments Reporting

## 6.5.3 Remedy Performance

Monitoring data, progress reports, and performance evaluation reports listed in Table 6-4 provide information that can be used to determine whether the remedial actions continue to operate and function as designed and has achieved, or is expected to achieve, cleanup levels.

*Table 6-4. Documents Supporting Remedy Performance at the Mound Site*

<b>Document</b>	<b>Purpose</b>	<b>Use for Review</b>
CERCLA Five-Year Review Report for the Operable Unit 1 Remedy at the U.S. Department of Energy Miamisburg Environmental management Project, September 2001	Records status and protectiveness of remedy	History Update Status
Annual Assessment of the Effectiveness of Institutional Controls applied to the former Mound Site Property, June 2001	Documents results of annual inspection and IC status	IC status
Annual Assessment of the Effectiveness of Institutional Controls applied to the former Mound Site Property, June 2002	Documents results of annual inspection and IC status	IC status
Annual Assessment of the Effectiveness of Institutional Controls applied to the former Mound Site Property, June 2003	Documents results of annual inspection and IC status	IC status

Table 6-4. Documents Supporting Remedy Performance at the Mound Site (cont.)

Annual Assessment of the Effectiveness of Institutional Controls applied to the former Mound Site Property, July 2004	Documents results of annual inspection and IC status	IC status
Annual Assessment of the Effectiveness of Institutional Controls applied to the former Mound Site Property, July 2005	Documents results of annual inspection and IC status	IC status
Phase I Groundwater Monitoring Report (January 2005 through November 2005), May 2006	Documents sampling results and conclusions regarding effectiveness of MNA remedy	Site status Monitoring results
Operable Unit 1 (OU-1) Technical Team Evaluation, June 2004	Provides recommendations to the Mound Core Team regarding remaining uncertainties associated with the OU-1 area.	History Site status Recommendation/Options regarding uncertainties
Operable Unit 1 Groundwater Rebound Test, April 2005	Documents the results of a rebound test performed in the OU-1 area	System Performance Site Status
Annual Site Environmental Report for Calendar Year 2002, September 2003	Summarize activities and monitoring results annually	Site Status Monitoring Results
OU-1 Monthly Summaries, entries in the ER Monthly report, 2001 through 2005	Documents the monthly operation and performance of the OU-1 system	System Performance

#### 6.5.4 Legal Standard Regarding Remedial Action

The legal documentation listed in Table 6-5 includes information pertinent to the site that specified responsibilities for conducting remedial action, implementing institutional and access controls, and O&M activities.

Table 6-5. Documents Supporting Legal Standards Regarding Remedial Action at the Mound Site

Document	Purpose	Use for Review
FFA under CERCLA Section 120; In the Matter of the U.S. DOE's Mound Plant (1993)	Documents the commitments and agreements regarding the implementation and operation of remedies. Also documents the responsibilities of other agencies	Required Actions Roles of Other Agencies
Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach, 1999	Documents the process for evaluating potential release sites (PRSS).	Site conditions
The Mound 2000 Residual Risk Evaluation Methodology (RREM), Mound Plant, 1997	Documents the methodology for evaluating the residual risk remaining for each parcel.	Site conditions
Site Sales Agreement	Documents how DOE will convey the Mound Plant Property to MMCIC by discrete parcels, subject to CERCLA Section 120(h) and the condition the property will be left in upon completion of remedial actions.	Required Actions

## 6.6 Risk Information Review

As documented in the Residual Risk Evaluations for each parcel, the risks from carcinogens and non-carcinogens to current and future occupants were evaluated. In those analyses, the type of occupant was limited to an industrial and/or commercial use scenario and was represented by a construction worker and a site employee (office employee). The review of risk information included an evaluation of ARARs, exposure assumptions, and remedial action objectives used at the time of remedy selection.

### 6.6.1 Applicable or Relevant and Appropriate Requirements

Table 6-6 is a summary of the chemical-specific ARARs identified in the RODs. No changes in the risk parameters or ARARs were identified that would call into question the protectiveness of the remedies selected at the Mound site.

*Table 6-6. Summary of ARARs that Affect the Protectiveness of Remedies*

Citation	Title	Parcel
OAC 3745-81-11	Maximum Contaminant Levels for Inorganic Chemical	Release Block D Release Block H Parcel 3 Parcel 4 Phase I Operable Unit 1
OAC 3745-81-12	Maximum Contaminant Levels for Organic Chemical	Release Block D Release Block H Parcel 3 Parcel 4 Phase I Operable Unit 1
OAC-3745-81-13	Maximum Contaminant Levels for Turbidity	Release Block D Release Block H Parcel 3 Parcel 4 Phase I Operable Unit 1
OAC-3745-81-15	Maximum Contaminant Levels for Radium 226, 228, and Gross Alpha	Release Block D Release Block H Parcel 3 Parcel 4 Phase I Operable Unit 1
OAC-3745-81-16	Maximum Contaminant Levels for Beta Particle and Photon Radioactivity	Release Block D Release Block H Parcel 3 Parcel 4 Phase I Operable Unit 1
40 CFR 141.11 to 141.16	Safe Drinking Water Act – Maximum Contaminant Levels	Phase I Operable Unit 1

## 6.6.2 Exposure Pathways

The site conceptual model for Mound provided the basis for evaluating human exposure scenarios and was defined in the *Residual Risk Evaluation Methodology* (DOE 1997). Based on the industrial/commercial land-use scenario, the significant pathways for potential exposure at the Mound site for a future construction worker included ingestion, dermal contact, inhalation of fugitive dust, external radiation from surface soil/sediment and subsurface soil, and ingestion, dermal contact, and inhalation of vapors from groundwater. The significant pathways for an office worker included ingestion, inhalation of fugitive dust and external radiation from surface soil and ingestion of groundwater.

The risk evaluation for Operable Unit 1 was performed prior to the Mound 2000 process. Risk was evaluated under the more conventional Baseline Risk Assessment approach where a future resident farmer scenario was evaluated. An assessment for the selected industrial future land-use was also performed that included soil remediation to industrial standards and no onsite groundwater use or standards. A summary discussion of the exposure assessment is presented in the *Operable Unit 1 Record of Decision* (DOE 1995). It was determined that the most immediate point of exposure for contaminants originating in OU-1 were the plant production wells.

The toxicological properties of each contaminant of concern were evaluated by reviewing the Integrated Risk Information System and/or Health Effects Assessment Summary Table data. These data sets provided no-observable effect levels and slope factors for chemicals and radionuclides encountered at Mound.

## 6.6.3 Remedial Action Objectives (RAOs)

The primary remedial action objective (RAO) for IC remedies at each parcel is to ensure that the residual risk associated with the parcel is acceptable or the defined use scenario of industrial and/or commercial occupants.

The RAO for soil in OU-1 is to prevent or reduce infiltration and migration of contaminants that would result in groundwater contamination in excess of remediation goals. Also, soil contaminants should not result in an aggregate excess cancer risk greater than  $1 \times 10^{-5}$  or a hazard index greater than 1 for occupational exposures.

The RAO for groundwater in OU-1 is to prevent ingestion of water with contaminant concentrations in excess of the remediation goals and to control or reduce to remediation goals the contaminant concentrations in the aquifer adjacent to OU-1. The preliminary remediation goals (PRGs) are shown in Table 6-7.

Table 6-7. Preliminary Remediation Goals for Groundwater in OU-1

Parameter	Risk-Based PRG <sup>a</sup>	SDWA MCL	Proposed PRG
Actinium-227 (pCi/L)	0.1	NL	2
Plutonium-238 (pCi/L)	0.2	15	0.2
Plutonium-239/240 (pCi/L)	0.2	15	0.6
Tritium (pCi/L)	900	20,000	3,000
Chlordane (alpha) (µg/L)	0.06	2	0.06
1,2-DCA (µg/L)	0.1	NL	0.1
cis-1,2-DCE (µg/L)	60	70	60
Perchloroethene (µg/L)	1	5	5
Tetrachloromethane (µg/L)	0.2	5	0.2
TCE (µg/L)	2	5	2
Trichloromethane (µg/L)	0.2	100	2
Vinyl Chloride (µg/L)	0.02	2	1

PRG Preliminary Remediation Goal

NL Not listed

SDWA Safe Drinking Water Act

<sup>a</sup> Risk-based PRGs concentration from residential water use scenario.

The groundwater constituents in Phase I were compared to the MCLs and the results were used in evaluating compliance with ARARs. Groundwater in Phase I exceeded the MCLs for TCE (5 milligrams per liter [mg/L]), barium (2 mg/L), combined Ra-226 and Ra-228 (5 picoCuries per liter [pCi/L]), nickel (100 micrograms per liter [µg/L]), and chromium (100 µg/L).

The RAOs documented in the RODs are being met by the selected remedies.

#### 6.6.4 Changes in Risk Assumptions since last Five-Year Review

For the evaluation of risk, the Mound Plant production wells were used as the point where exposure to contaminated groundwater would occur. These wells were screened in the BVA. The Mound Plant production wells no longer exist. These wells were removed from service in October 2005 when the facility was placed on the city water supply. However, for future land use, the assumption of an on-site production well screened in the BVA, similar to the Mound Plant production wells, is still valid.

### 6.7 Data Review

Data will be discussed for each remedy: Phase I and OU-1. Annual reports have been prepared for the Phase I MNA Groundwater Remedy in 2004 and 2005. Data for the OU-1 pump and treat (P&T) system has been reported monthly project reports prepared by the remediation contractor.

## 6.7.1 Operable Unit 1

The performance of the P&T system is assessed by three different metrics:

- VOC mass removal and mass removal rate
- System uptime verses down time
- Hydraulic containment of the contaminant plume/area

When these three factors are maximized, then the system is operating in an acceptable manner. A large amount of data has been collected for the OU-1 P&T system to monitor the performance of the system. This data includes water level measurements, groundwater samples, effluent samples, influent samples, and volumes treated.

In consideration of the anticipated treatment time required for the conventional P&T system to remediate the OU-1 area, the SVE and air sparge systems were installed and put into operation in 1997 to expedite the removal of VOCs from soils and groundwater. It was later (about 1 year) determined that the air sparge system was not functioning properly due to site conditions and the operation of that portion of the system was terminated. Although the operation of the SVE system is not stipulated in the ROD, a significant amount of VOC contamination has been removed by this system. A portion of the SVE system was removed in 2005 to support the excavation activities in the landfill area. It was determined that the removed portion did not have to be replaced primarily due to the removal of the soil source in that area.

### 6.7.1.1 Hydraulic Capture

Local hydraulic gradients are determined by conducting three point evaluations using monitoring wells that straddle the compliance boundary. Two sets of 3 monitoring wells are currently being utilized to determine if hydraulic containment is achieved. Wells 0305, 0410, and 0417 are used to verify containment at the southern boundary and Wells 0422, 0423, and P003 are used to verify containment at the western boundary. The compliance boundaries are the west and south access roads located adjacent to the landfill area. The groundwater gradients are calculated to determine whether groundwater flow direction has been reversed and flow is coming inward across the compliance boundaries. It was assumed from a groundwater model that complete hydraulic control can be assumed if a 0.002 foot/foot average inward gradient is maintained across at least a 25-foot wide border centered on the compliance boundary. A summary of the data collected since 2002 is presented in Table 6-8. Although the 0.002 ft/ft gradient has not been continuously maintained across the compliance boundary, the results show that the system has been capturing the contaminated groundwater by maintaining a positive gradient across the compliance boundaries.

Table 6-8. Summary of Hydraulic Gradients for the OU-1 P&T System

Date	Hydraulic Gradient (ft/ft)		Date	Hydraulic Gradient (ft/ft)	
	0422/0423/P003	0305/041/0417		0422/0423/P003	0305/041/0417
1/2/2002	0.0024	0.0026	1/31/2005	0.0021	0.0019
2/28/2002	0.0017	0.0031	3/3/2005	0.0022	0.0031
4/2/2002	0.0020	0.0036	3/30/2005	0.0048	0.0018
5/1/2002	0.0021	0.0036	4/29/2005	0.0049	0.0027
5/30/2002	0.0023	0.0024	5/31/2005	0.0020	0.0027
8/28/2002	0.0009	0.0038	7/5/2005	0.0020	0.0027
9/26/2002	0.0009	0.0040	8/3/2005	0.0019	0.0027
10/31/2002	0.0009	0.0036	9/2/2005	0.0022	0.0029
12/2/2002	0.0007	0.0046	10/3/2005	0.0021	0.0023
2/3/2003	0.0010	0.0039	11/3/2005	0.0022	0.0027
3/3/2003	0.0011	0.0034	12/5/2005	0.0026	0.0024
3/27/2003	0.0023	0.0034	12/21/2005	0.0010	0.0046
5/5/2003	0.0017	0.0052	1/4/2006	0.0027	0.0021
4/5/2004	0.0020	0.0034	2/2/2006	0.0026	0.0027
5/5/2004	0.0018	0.0030	3/2/2006	0.0023	0.0030
6/1/2004	0.0021	0.0040	3/30/2006	0.0024	0.0017
6/29/2004	0.0018	0.0037	4/26/2006	0.0025	0.0025
8/31/2004	0.0014	0.0037	6/1/2006	0.0024	0.0027
10/4/2004	0.0017	0.0047	7/5/2006	0.0020	0.0026
11/2/2004	0.0025	0.0084	8/1/2006	0.0025	0.0029
11/30/2004	0.0012	0.0038			

Positive gradients indicate inward flow

### 6.7.1.2 System Performance

The VOC contaminants of concern have been monitored monthly on both the influent and effluent. The influent concentrations have been used to determine the mass of contaminants removed. This data shows that the P&T system is being effective in the removal of the contaminants of concern (COCs) from the groundwater by the rate of which the mass of the contaminants present in the influent is decreasing. A graph of the mass removed over time is shown in Figure 6-1. The influent concentrations in the 3 extraction wells have also decreased over time (Figures 6-2 through 6-4), indicating that the concentrations within the area of groundwater impact are also decreasing. Increases in VOC concentrations are noted during the rebound test (May 2003 through February 2004). The effluent data demonstrates the effectiveness of the air stripper in removing the COCs from the water being treated. The concentrations of VOCs in the effluent are generally non-detect. These graphs were constructed using the data that were available at the time of this review.

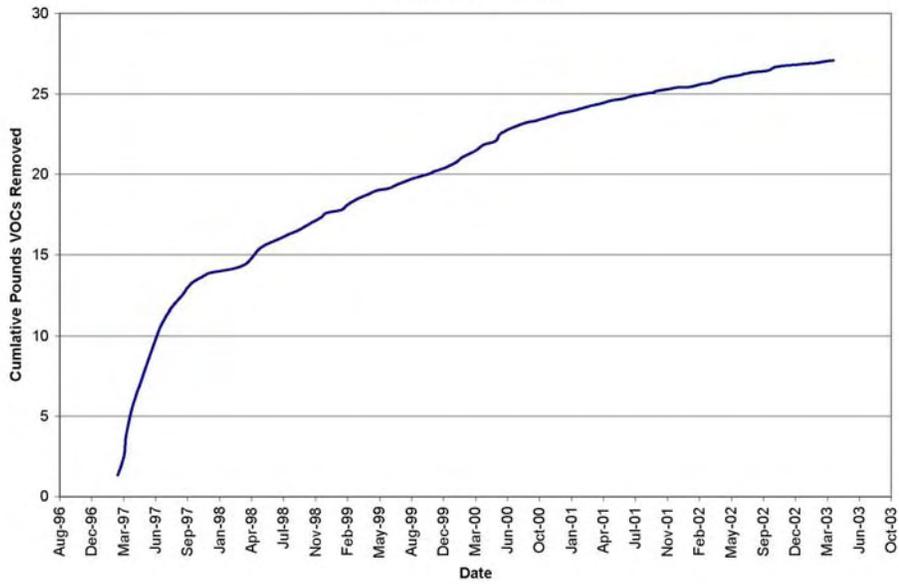


Figure 6-1. Mass Removed by OU-1 Pump and Treat System

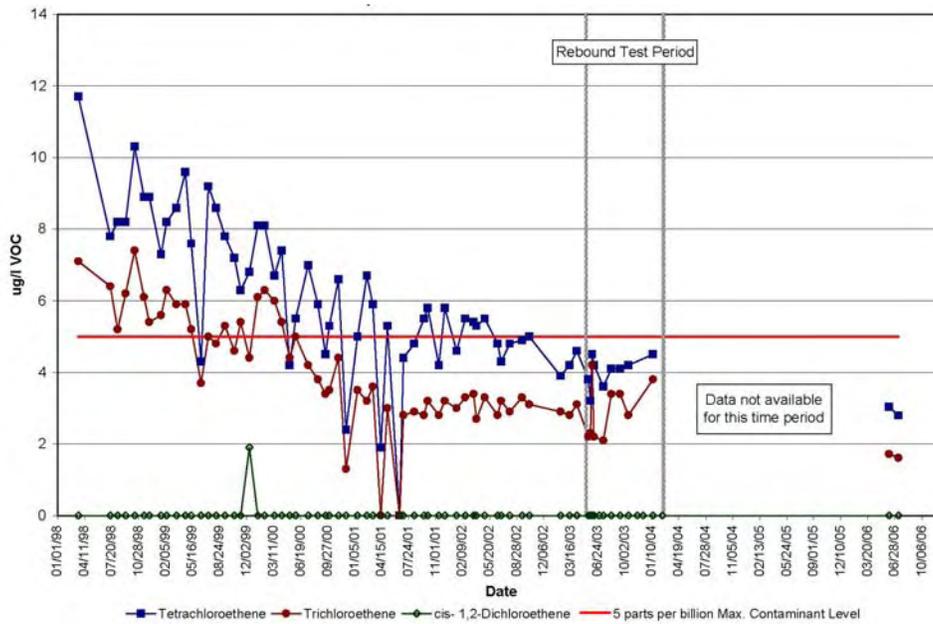


Figure 6-2. VOC Concentrations in Extraction Well 0412

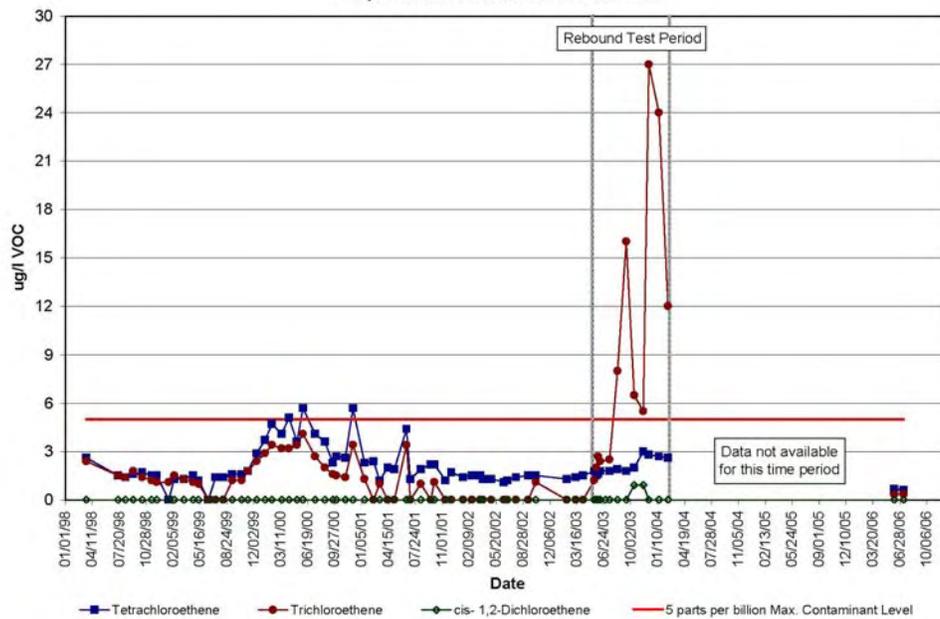


Figure 6-3. VOC Concentrations in Extraction Well 0413

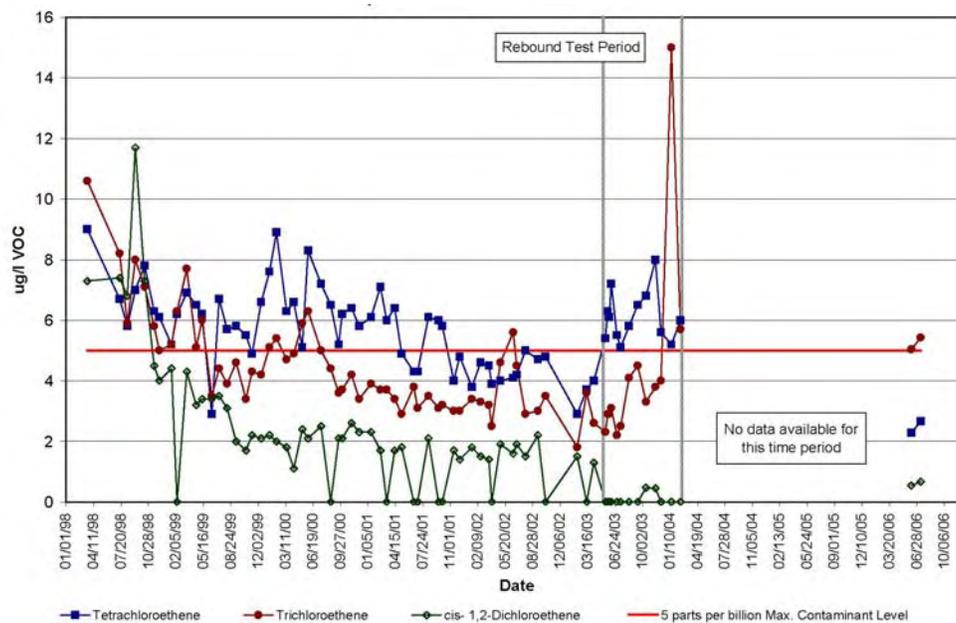


Figure 6-4. VOC Concentrations in Extraction Well 0414

The P&T system is designed to operate continuously or as near to as continuous as practicable as it is the primary system that contains the contaminant plume. The P&T system has generally run about 90 percent of the time each month. Downtime is typically for general maintenance activities. Exceptions are the result of mechanical failures or power outages, which resulted in shorter percentages of operation. The P&T system was not operating from May 12, 2003 through February 23, 2004 due to the performance of the rebound test (See Section 6.7.1.6).

### 6.7.1.3 Groundwater Monitoring

The measurement of chemical characteristics of the groundwater in the vicinity of the OU-1 P&T system provides the definite long-term feedback on the operation of the system. Wells on the western and southern compliance boundaries exhibit downward trends (Figure 6-5). Increased concentrations were observed during the rebound test; however, concentrations continued to decrease after restarting the P&T system. Downgradient wells exhibit concentrations of TCE and Perchloroethene (PCE) less than the respective PRG of 1 µg/L and 5 µg/L (Figure 6-6). This trend in the downgradient monitoring wells should continue as the operation of the system progresses, since the system will cut off the plume from its source.

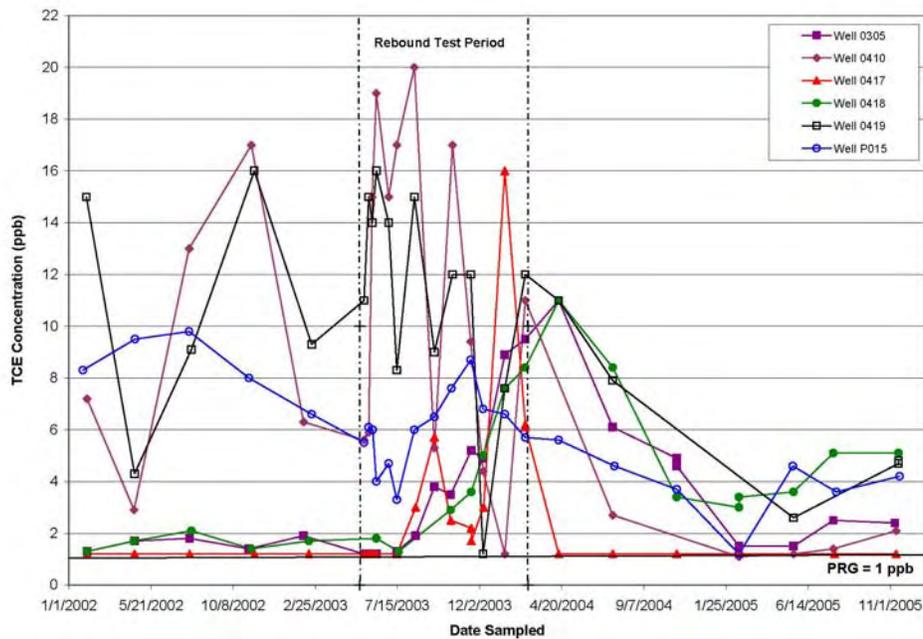


Figure 6-5. VOC Concentrations in Wells Along the Compliance Boundaries

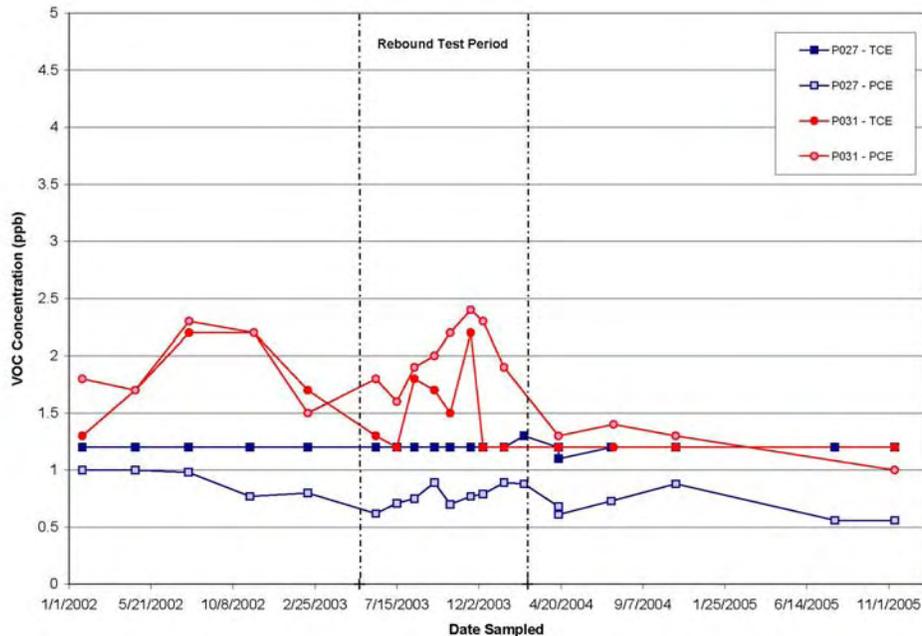


Figure 6-6. VOC Concentrations in Wells Downgradient of OU-1

#### 6.7.1.4 Compliance Monitoring

The effluent from the pump and treatment system is monitored and discharged in accordance with the CERCLA ATD under NPDES (Authorization Number 1IN90010\*BD) (Table 6-9). These data are reported monthly to OEPA. There has not been an exceedence of any of the discharge limits during 2001 through 2006. The VOC data from the effluent is typically non-detect, indicating that system is effective at removing the organic compounds from the groundwater.

Table 6-9. Monitoring Requirements for Outfall 003

Parameter	Discharge Limits			Sample Type	Frequency
	Maximum	Minimum	Monthly		
Flow Rate – MGD	---	---	---	24 hr total	daily
pH – S.U.	9.0	6.5	---	grab	weekly
Dissolved Oxygen – mg/L	---	---	---	grab	monthly
Copper, total recoverable – µg/L	---	---	---	24 hr composite	monthly
Mercury, total (low level) – ng/L	2200	---	23	grab	monthly
CBOD, 5 day – mg/L	---	---	---	24 hr composite	monthly
Carbon Tetrachloride - µg/L	10	---	5	grab	monthly
Chloroform - µg/L	10	---	5	grab	monthly
Methylene Chloride - µg/L	10	---	5	grab	monthly
Tetrachloroethylene - µg/L	10	---	5	grab	monthly
Trichlorofluoromethane - µg/L	10	---	5	grab	monthly
1,1,1-Trichloroethane - µg/L	10	---	5	grab	monthly
1,2-trans-Dichloroethylene - µg/L	10	---	5	grab	monthly
Vinyl Chloride - µg/L	10	---	5	grab	monthly
Trichloroethylene - µg/L	10	---	5	grab	monthly
cis-1,2-Dichloroethylene - µg/L	10	---	5	grab	monthly

### 6.7.1.5 Soil Vapor Extraction (SVE) System Performance

The SVE system was installed in December 1997 and has been operating as designed. The performance of the SVE system is based on the system uptime verses down time and the mass of contaminants that are removed.

The P&T system is designed to operate continuously or as near to as continuous as practicable. The SVE system is interlocked with the P&T system; meaning that in order for the SVE system to operate, the P&T system must be operating. This is necessary due to the transport of condensation liquids from the SVE system to the P&T system for treatment. The SVE system has generally run about 90 percent of the time each month. Downtime is typically for general maintenance activities. Exceptions include longer downtimes for the P&T system, mechanical failures, or power outages, which resulted in shorter percentages of operation. The SVE system was not operating from May 12, 2003 through February 23, 2004 due to the performance of the rebound test (See Section 6.7.1.6).

The mass of volatile organics removed by the SVE system has been calculated during the treatment period. The mass removed has decreased over time. A total mass of 4,032 pounds of VOCs has been removed by the SVE through February 2005. A summary of the mass removed each year is provided below:

December 1997 – December 1998	2,594 pounds
January 1999 – December 1999	403 pounds
January 2000 – December 2000	722 pounds
January 2001 – December 2001	61 pounds
January 2002 – December 2002	73 pounds
January 2003 – February 2003	52 pounds
March 2003 – March 2005	127 pounds

### 6.7.1.6 Rebound Test

A rebound test was conducted from May 12, 2003 through February 23, 2004. The details for conducting this test are outlined in the *Rebound Test Plan for Operable Unit 1 Groundwater System at the Miamisburg Closure Project* (DOE 2003c) and the results are summarized in the *Operable Unit 1 Groundwater Rebound Test* (DOE 2005a). The test involved the collection and analysis of groundwater samples from wells within the OU-1 area. The samples were analyzed for VOCs and the results were compared to historical concentrations to assess the degree to which the groundwater system would show rebound of VOC concentrations. The rebound test was stopped in February because pre-determined VOC threshold concentrations were exceeded. The operation of the P&T and SVE system were resumed after the completion of the test.

The OU-1 area was divided into 6 flow zones: upgradient, interior, east edge, west edge, mid-section and downgradient. Initially, all wells were sampled on a weekly schedule. As the test progressed, changes were made to the sampling frequency; however, where concentrations were changing with time, the sampling frequency remained relatively high.

The concentrations in the upgradient, interior, and downgradient wells remained relatively stable throughout the rebound tests. The midsection, west edge, and east edge wells showed variable VOC concentrations throughout the test. The following is a summary of changes observed during the test period:

- The concentrations in the east edge wells were variable throughout the test period. Changes may be linked to changes in groundwater levels. Threshold values were not exceeded at anytime during the test.
- All midsection wells, with the exception of 0374, showed a long term increase in TCE concentrations. PCE concentrations remained relatively stable throughout the test. Threshold levels were not exceeded; however, the threshold level for TCE (10 µg/L) was closely approached in the last sampling event.
- Concentrations in the west edge wells showed the greatest changed throughout the test. West edge Well 0417 exceeded the TCE threshold twice during the rebound test. Samples collected in September 2003 and January 2004 showed TCE concentrations of 6 and 16 µg/L, respectively. Also, a TCE concentration increase was noted at Well 0413 in the sampling period prior to the increase in Well 0417.

It was concluded from the rebound test that changes in the VOC concentrations may have been more closely linked to increases in the groundwater table than from classical rebound of concentrations over time. During the test period, high groundwater levels were measured and were due to exceptionally high river stages in July 2003. During this timeframe, increases in VOC concentrations were observed in the wells.

The decision to abort the rebound test and restart the remediation system was precipitated by the increase of TCE in Well 0417 in January. It was proposed to continue on with the rebound test to evaluate the changes in VOCs over time and to sample more frequently in downgradient wells to ensure there was no additional migration of VOCs or impact to the production wells. This proposal was rejected by the regulatory agencies.

## **6.7.2 Phase I Groundwater**

Groundwater sampling in the Phase I area to support the MNA remedy was started in 2004. Samples are collected from 8 wells and 1 seep to monitor the attenuation of TCE in this area. Samples are also collected from 7 wells to confirm the conclusions regarding the presence of elevated barium, radium 226/228, nickel, and/or chromium in groundwater.

### **6.7.2.1 Early Data**

During the remedial investigation program for the project, VOC contamination was identified in the Phase I area. Concentrations of TCE greater than the MCL of 5 mg/L were identified in Well 0411 and Seep 0617. Soil and groundwater data from the wells in the vicinity of Well 0411 suggest that the TCE contamination is most likely limited to the area adjacent to the well. There

is no known continuing source of TCE contamination in the soil in Phase I. However, TCE is not naturally occurring and was widely used in plant operation.

Groundwater data collected for both routine monitoring and to support parcel transfer yielded unusual and unexpected results. Relatively high concentrations of radium and barium were observed in low-yielding bedrock wells that are located in two different areas of the Mound site. Neither of the subject areas is located in the central part of the site that involved production or materials handling. An investigation is in the *Geochemical Evaluation of Elevated Ba and Ra in Bedrock at the Miamisburg Closure Project* (DOE 2006a). The hypothesis from the investigation for the presence of the elevated parameters is that the brines in Wells 0335 and 0445 originate from dissolution of salt stored at the ground surface. The dense brine infiltrated into an area of the bedrock that is relatively isolated from the main groundwater from regime. Interactions of this brine with the bedrock released radium and barium to the groundwater.

Field investigations indicated elevated nickel and chromium concentrations occur in wells constructed of stainless steel. Fieldwork showed that elevated chromium and nickel in the wells was highly localized and not widespread. Crevice corrosion of the wire slotted stainless steel well casing was the suspected mechanism for releasing the chromium and nickel from the casing to the groundwater adjacent to the well. This condition is more evident in samples collected using low-flow sampling techniques. The elevated levels observed in Wells 0319, 0399, 0400, and 0411 are the likely result of corrosion of the well casing and not the result of plant operations.

#### **6.7.2.2 2004 Data**

Results, interpretations, and conclusions from the 2004 sampling events are presented in the *Phase I Groundwater Monitoring Report* (January 2004 through November 2004) (DOE 2006b). The report summarizes the data collected in both time series plots and map view plots. The time series plots are utilized to determine data trend and to interpret the effectiveness of the MNA remedy.

*Remedy Monitoring*—Monitoring results show continued low-level TCE and cis-1,2-dichloroethylene (DCE) detections in bedrock monitoring Wells 0411 and 0443 as well as bedrock Seep 0617. All VOC concentrations remained below trigger levels during 2004. All wells screened in the downgradient BVA groundwater system continue to show no detectable concentrations of VOCs.

*Confirmatory Sampling – Barium and Radium*—Monitoring results show elevated radium-226/228 and barium concentrations in monitoring Well 0445. Results for November were reported above the level of concern of 75 pCi/L. Radium and barium concentrations in the BVA wells (0400, 0402, and P033) remained low. The low levels of radium and barium detected in the BVA wells demonstrates that the BVA is not being adversely impacted by the upgradient bedrock water in the vicinity of Well 0445.

*Confirmatory Sampling – Chromium and Nickel*—Requirements for nickel and chromium monitoring were not finalized until September 2004; therefore, samples were not collected for the first three quarters of 2004. Monitoring results show very low concentrations of nickel and chromium in bedrock monitoring Well 0442, which is constructed from PVC. Bedrock monitoring Well 0443 demonstrated excessively high levels of chromium and nickel. This well was unable to support micropurge sampling during the November 2004 sampling event and was sampled using a bailer. Filtered and unfiltered samples were collected, as samples collected using a bailer are typically turbid. It is assumed the filtered samples may more closely represent dissolved metal load in this area when compared to previously collected data. The unfiltered samples likely represent metal sorbed onto sediment surfaces. The chromium and nickel sample results for the remainder of the locations were below the 100 µg/L level of concern.

*Summary*—VOC data collected in support of the MNA remedy demonstrate that the BVA is not being impacted by the localized low-level TCE contamination in the bedrock groundwater system. There are no strong trends evident in the VOC data from Wells 0411 and 0443 and Seep 0617 during 2004.

No conclusions were drawn from the confirmatory sampling for barium, radium, chromium, and nickel. Sampling continued in 2005.

### **6.7.2.3 2005 Data**

Results, interpretations, and conclusions from the 2005 sampling events are presented in the *Phase I Groundwater Monitoring Report* (January 2005 through November 2005) (DOE 2006c). The report summarizes the data collected in both time series plots and map view plots. The time series plots are utilized to determine data trend and to interpret the effectiveness of the MNA remedy.

*Remedy Monitoring*—Monitoring results show continued low-level TCE and cis-1,2-DCE detections in bedrock monitoring Wells 0411 and 0443 as well as bedrock Seep 0617 (Figures 6-7 and 6-8). No detectable concentrations of vinyl chloride were reported. All VOC concentrations remained below trigger levels during 2005. All wells screened in the downgradient BVA groundwater system continue to show no detectable concentrations of VOCs.

*Confirmatory Sampling – Barium and Radium*—Monitoring results show elevated radium-226/228 and barium concentrations in monitoring Well 0445. Results for May and November were reported above the level of concern of 75 pCi/L. Radium and barium concentrations in the BVA wells (0400, 0402, and P033) remained low. Radium levels in Wells 0400 and 0402 increases slightly but are still below the MCL of 5 pCi/L. Barium and radium concentrations since 1999 are shown in Figures 6-9 and 6-10. Further monitoring is required to determine if the radium increase in these wells are a trend. The low levels of radium and barium detected in the BVA wells demonstrates that the BVA is not being adversely impacted by the upgradient bedrock water in the vicinity of Well 0445.

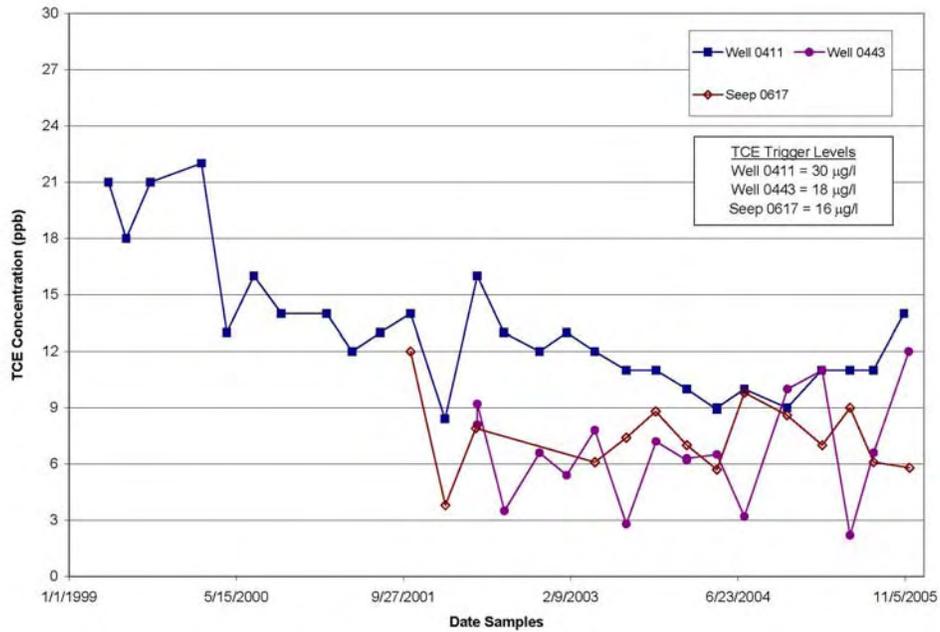


Figure 6-7. TCE Concentrations in Wells 0411 and 0443 and Seep 0617 in Phase I

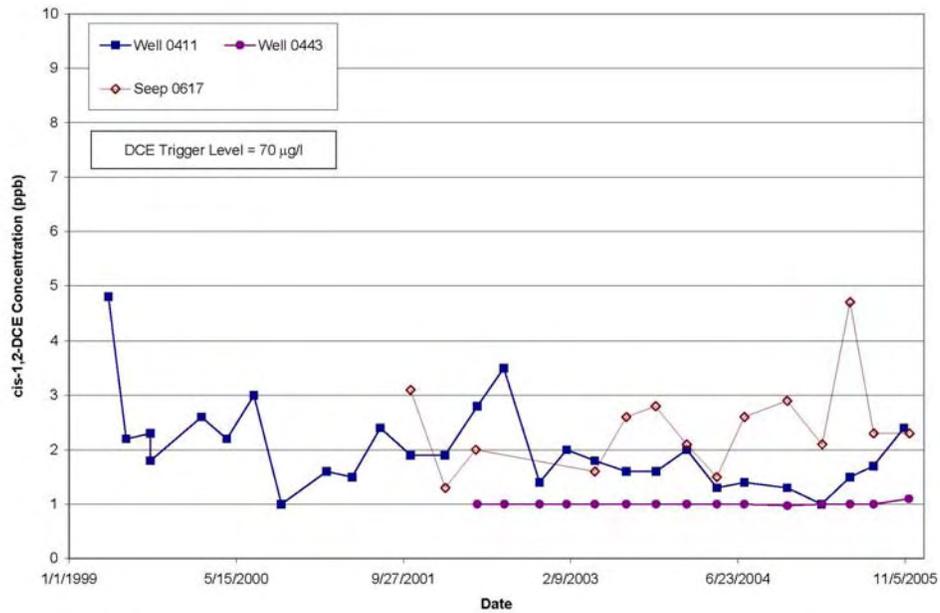


Figure 6-8. cis-1,2-DCE Concentrations in Wells 0411 and 0443 and Seep 0617 in Phase I

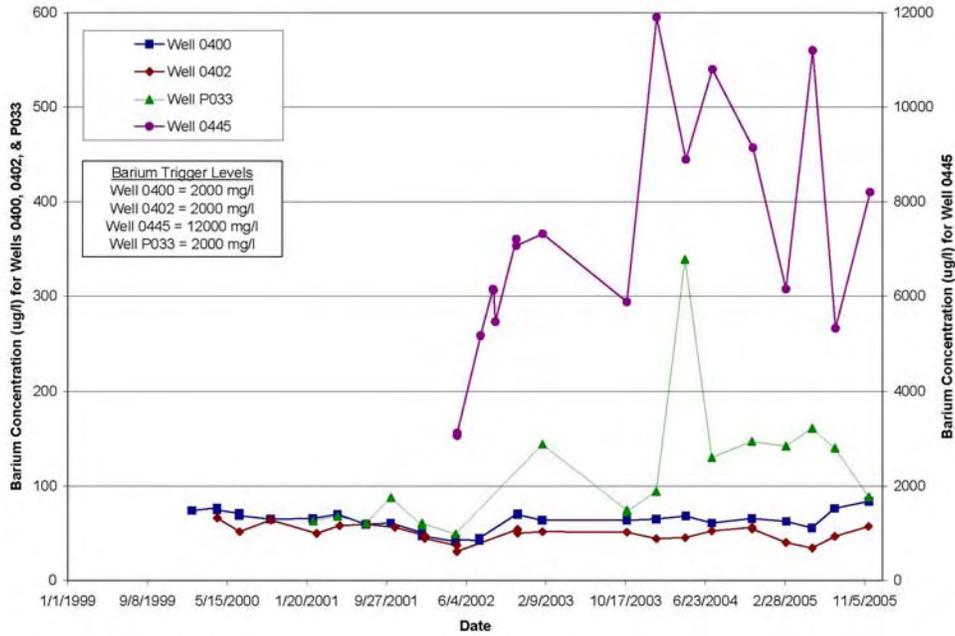


Figure 6-9. Barium Concentrations in Wells 0400, 0402, 0445, and P033 in Phase I

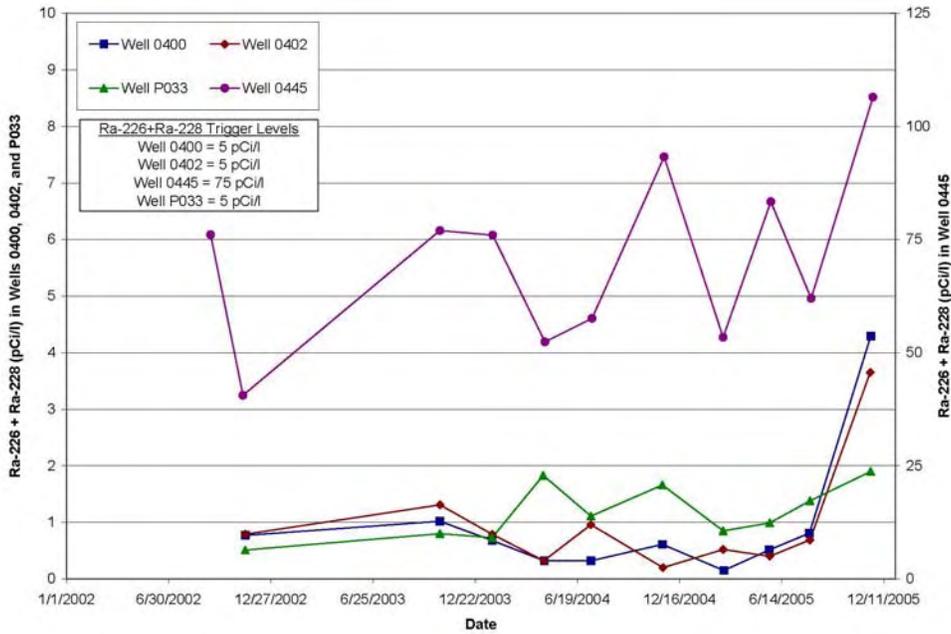


Figure 6-10. Combined Radium 226/228 Concentrations in Wells 0400, 0402, 0445, and P033 in Phase I

*Confirmatory Sampling – Chromium and Nickel*—Monitoring results show very low concentrations of nickel and chromium in bedrock monitoring Well 0442, which is constructed from PVC. BVA Well 0319 had a nickel excursion of 166 µg/L in May 2005 (high flow rate sample), which exceeded the 100 µg/L level of concern. This event was followed by two quarters of results less than 50 µg/L. Well 0400 showed low levels of chromium and nickel for the high flow rate sample. All chromium sample results were below the 100 µg/L level of concern. Previous investigation have demonstrated that high flow samples are representative of Ni and Cr concentrations in BVA while the low flow samples show elevated Cr and Ni concentrations as a result of corrosion of stainless steel well casings. Chromium and nickel concentrations since 2002 are shown in Figures 6-11 and 6-12.

*Summary*—VOC data collected in support of the MNA remedy demonstrate that the BVA is not being impacted by the localized low-level TCE contamination in the bedrock groundwater system. There are no strong trends evident in the VOC data from Wells 0411 and 0443 and Seep 0617 during 2005.

Confirmatory sampling for barium and radium showed an increase in radium concentrations at Wells 0400 and 0402 during 2005. Sampling will continue to determine if a trend is occurring at these locations.

Confirmatory monitoring for nickel and chromium showed one excursion above the level of concern for nickel. The single result for May was not duplicated during 2005. Monitoring will continue to determine if a trend is occurring at this location.

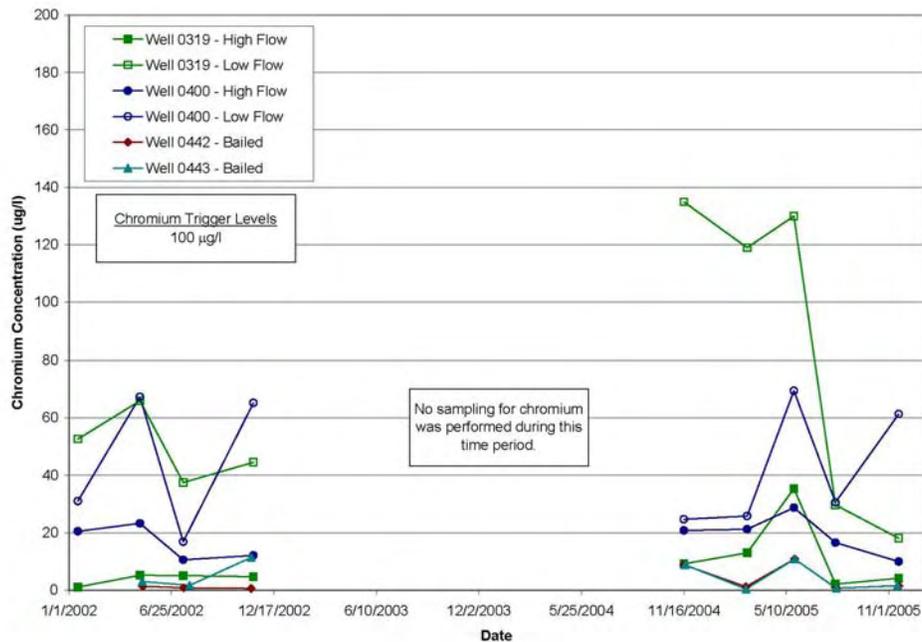


Figure 6-11. Chromium Concentrations in Wells 0319, 0400, 0442, and 0443 in Phase I

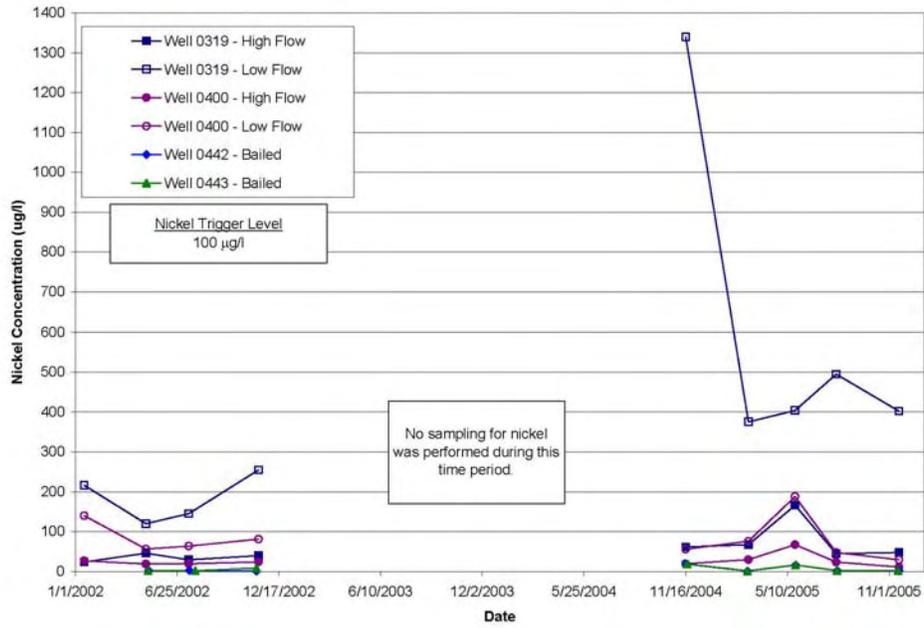


Figure 6-12. Nickel Concentrations in Wells 0319, 0400, 0442, and 0443 in Phase I

End of current text

## 7.0 Technical Assessment

### 7.1 Institutional Controls

***Question A: Is the remedy function as intended by the decision documents?***

**Answer A: Yes, the remedy is functioning as intended by the decision documents.**

#### 7.1.1 Remedial Action Performance

The review of documents and the results of the annual and Five-Year Review inspections indicate that the remedies for Parcels D, H, 3, and 4, which consist of ICs on land and groundwater use, is functioning as intended.

#### 7.1.2 Operations and Maintenance

Operation and maintenance activities are performed as outlined in the *Operations and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property*. DOE has performed annual walk-overs and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended, thus far.

#### 7.1.3 Opportunities for Optimization

The use of hand-held global positioning system (GPS) units has been recommended during previous annual inspections as discussed in Section 6.5. The GPS units could enhanced the inspections by assisting in locating certain important inspection points, such as features noted in previous inspections or aerial photographs or monitoring wells.

#### 7.1.4 Early Indicators of Potential Issues

Recurring use of the retention basin in Parcel 4 indicates there is potential for violation of ICs (use inconsistent with industrial/commercial land-use).

***Question B: Are the exposure assumption, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy selection still valid?***

**Answer: Yes, the exposure assumptions, toxicity data, clean-up levels, and remedial objectives used at the time of the remedy are still valid.**

No changes in the risk parameters or ARARs were identified that would call into question the protectiveness of the remedies selected at the Mound site.

For the evaluation of risk, the Mound Plant production wells were used as the point where exposure to contaminated groundwater would occur. These wells were screened in the BVA. The

Mound Plant production wells no longer exist. These wells were removed from service in October 2005 when the facility was placed on the city water supply. However, for future land use, the assumption of an on-site production well screening in the BVA, similar to the Mound Plant production wells is still valid.

***Question C: Has any other information come to light that could call into question the protectiveness of the remedy?***

**Answer C: No other information has come to light that could call into question the protectiveness of the remedy.**

## **7.2 OU-1 Remedy**

***Question A: Is the remedy function as intended by the decision documents?***

**Answer A: Yes, the remedy if functioning as intended by the decision documents.**

### **7.2.1 Remedial Action Performance**

The review of documents and environmental monitoring data and the results of the Five-Year Review inspection indicate that the remedy for OU-1, which consists of controlling contaminant migration through the use of a pump and treatment system, is functioning as intended. Hydraulic and groundwater data indicate that the migration of the plume has been controlled by the use of the extraction wells. The performance monitoring indicates that VOC contamination is being extracted by the wells and treated to levels typically less than the detectable limit through the air stripper. Based on groundwater monitoring, potential receptors have not been exposed to VOC contamination from the landfill.

### **7.2.2 Operations and Maintenance**

Operation and maintenance activities are performed as outlined in the *OU-1 Pump and Treatment Operational and Maintenance Plan*. DOE also performs annual inspections on long-term remedies as called out in this plan and other O&M Plans. DOE has performed groundwater monitoring, effluent monitoring and system monitoring and has found this remedy to be functioning as intended, thus far.

### **7.2.3 Implementation of Institutional Controls and other Measures**

The results of the five-year inspection indicate that the fencing installed to prevent access to the landfill and the surface water controls are functioning adequately. ICs that restrict land use and groundwater use will be implemented at a later date as outlined in the Record of Decision.

#### 7.2.4 Monitoring Activities

Groundwater level measurements and groundwater contaminant information have been collected as prescribed. These results from these data indicate that the plume has been contained and unacceptable migration has not occurred.

Influent and effluent data from the pump and treatment system indicate that VOC contaminated groundwater is being extracted and the mass removed over time has decreased. Effluent data supports that the air stripper system is effective in removing VOC contamination from the groundwater.

#### 7.2.5 Opportunities for Optimization

A checklist should be developed for a more regimented inspection of the OU-1 landfill area. To date, environmental restoration activities have been on-going at the Mound site and a full-time presence that can address events in the OU-1 area is available. In the future, limited resources at the Mound site will reduce the ability to identify potential issues.

#### 7.2.6 Early Indicators of Potential Issues

There are no early indicators of potential issues that could affect the protectiveness of the remedy.

***Question B: Are the exposure assumption, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy selection still valid?***

**Answer: Yes, the exposure assumptions, toxicity data, clean-up levels, and remedial objectives used at the time of the remedy are still valid.**

No changes in the risk parameters or ARARs were identified that would call into question the protectiveness of the remedies selected at the Mound site.

For the evaluation of risk, the Mound Plant production wells were used as the point where exposure to contaminated groundwater would occur. These wells were screened in the BVA. The Mound Plant production wells no longer exist. These wells were removed from service in October 2005 when the facility was placed on the city water supply. However, for future land use, the assumption of an on-site production well screening in the BVA, similar to the Mound Plant production wells is still valid.

Also, the influence of the removal of the production wells should be evaluated on the adequacy of the monitoring network in the vicinity of OU-1. The production wells artificially controlled the groundwater flow in the area. Now that these wells have been removed, the groundwater flow direction should be evaluated with respect to the compliance boundary and the assessment of off-site migration.

*Question C: Has any other information come to light that could call into question the protectiveness of the remedy?*

**Answer C: No other information has come to light that could call into question the protectiveness of the remedy.**

### **7.3 Phase I Groundwater (MNA) Remedy**

*Question A: Is the remedy function as intended by the decision documents?*

**Answer A: Yes, the remedy is functioning as intended by the decision documents.**

#### **7.3.1 Remedial Action Performance**

The review of documents and environmental monitoring data and the results of the annual and Five-Year Review inspections indicate that the remedy for Phase I, which consists of MNA to address groundwater impact and ICs on land and groundwater use, is functioning as intended.

#### **7.3.2 Operations and Maintenance**

Operation and maintenance activities are performed as outlined in the *Operations and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property* and the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. DOE has performed annual walkovers and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended, thus far. DOE has also performed groundwater monitoring and has found the groundwater remedy to be functioning as intended, thus far.

#### **7.3.3 Implementation of Institutional Controls and other Measures**

ICs have been implemented in the form of deed restrictions on future land use. A summary is prepared and included with the parcel deed that fulfills the requirements of CERCLA Section 120(h). The summary includes a discussion of the contamination that was present, the remedial actions that have taken place, and the residual risk that remains.

The current land owner has implemented several measures to ensure that ICs are not violated. These include including language into the technical requirements of all Requests for Proposal and Work Orders for work being performed on transferred parcels that excavated soil is not be removed from the site.

#### **7.3.4 Monitoring Activities**

Groundwater monitoring has been performed as prescribed in the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. Results from this monitoring indicate that

concentrations do not exceed target levels. However, this remedy has not been implemented long and insufficient data is available to determine a trend in contaminant concentrations. Confirmatory sampling for radium, barium, chromium, and nickel are also inconclusive at this time.

### **7.3.5 Opportunities for Optimization**

None have been identified based on this Five-Year Review.

### **7.3.6 Early Indicators of Potential Issues**

There are no early indicators of potential issues that could affect the protectiveness of the remedy.

***Question B: Are the exposure assumption, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy selection still valid?***

**Answer: Yes, the exposure assumptions, toxicity data, clean-up levels, and remedial objectives used at the time of the remedy are still valid.**

No changes in the risk parameters or ARARs were identified that would call into question the protectiveness of the remedies selected at the Mound site.

For the evaluation of risk, the Mound Plant production wells were used as the point where exposure to contaminated groundwater would occur. These wells were screened in the BVA. The Mound Plant production wells no longer exist. These wells were removed from service in October 2005 when the facility was placed on the city water supply. However, for future land use, the assumption of an on-site production well screening in the BVA, similar to the Mound Plant production wells is still valid.

***Question C: Has any other information come to light that could call into question the protectiveness of the remedy?***

**Answer C: No other information has come to light that could call into question the protectiveness of the remedy.**

End of current text

## 8.0 Issues

A summary of the issues identified during this Five-Year Review are compiled in Table 8-1. These issues were identified through either report review or walkovers and inspections. In general, most are suggestions for best management practice. However, several could result in deficiencies that would make proving protectiveness of the remedy in the future difficult.

*Table 8-1. Primary Issues Identified during the Five-Year Review*

Issue		Affects Protectiveness (Y/N)	
		Current	Future
1	Ineffective signage at the Parcel 4 retention basin has resulted in violation of ICs in the past (land-use inconsistent with industrial/commercial land-use). (Sections 6.5.4 and 6.5.5)	N	Y
2	Permanent ID markers are not installed on all long-term groundwater monitoring wells. (Section 6.5 and photographs in Appendix B)	N	N
3	Protective casings of the long-term groundwater monitoring locations are in general disrepair. (Section 6.5 and photographs in Appendix B)	N	Y
4	Adequate protection from vehicular traffic is not present for long-term groundwater monitoring wells. (Section 6.5 and photographs in Appendix B)	N	N
5	Excessive vegetation is present around the long-term groundwater monitoring locations. (Section 6.5 and photographs in Appendix B)	N	N
6	Excessive vegetation is present around the OU-1 facility and structures and on the landfill surface. (Section 6.6.3 and photographs in Appendix B)	N	N
7	Inadequate stormwater control is maintained on the southwestern corner of the landfill. (Section 6.6.3 and photographs in Appendix B)	N	N
8	Inadequate documentation and interpretation of operational and monitoring data for the OU-1 remedy is maintained. (Section 6.4.1)	N	Y

End of current text

## 9.0 Recommendations and Follow-Up Actions

### 9.1 Issue 1

*1. Ineffective signage at the Parcel 4 retention basin has resulted in violation of the ICs in the past (land-use inconsistent with industrial/commercial land-use).*

The present signage (Recreational Use Prohibited) around the retention basin in Parcel 4 does not adequately inform people who may frequent the area that the use of the basin for fishing is not allowed. The area has been landscaped and a hiking/biking path is located adjacent to the basin and lends to the perception that the basin can be used for recreational purposes. Signage that informs area visitors that fishing, as well as swimming and wading, is prohibited would be more straightforward. An alternative would be to post that there are no fish stocked in the basin and this may deter future use. By addressing this issue earlier rather than later will prevent an unacceptable exposure to the public as this retention basin collects water from other portions of the Mound Plant property, which have been remediated to an industrial use scenario, not a recreational use scenario.

This issue should be addressed by DOE, EPA, and OEPA in conjunction with the property owner, MMCIC. A reconciliation of this issue should be achieved prior to the next walkover inspection for the evaluation of ICs at the Mound site that is forecast for February of 2007.

### 9.2 Issues 2, 3, 4, and 5

- 2. Permanent ID markers are not installed on all long-term groundwater monitoring wells.*
- 3. Protective casings of the long-term groundwater monitoring locations are in general disrepair.*
- 4. Adequate protection from vehicular traffic is not present for long-term groundwater monitoring wells.*
- 5. Excessive vegetation is present around the long-term groundwater monitoring locations.*

A routine maintenance program needs to be established for the long-term groundwater monitoring locations at the Mound site. This program should include periodic inspections of the integrity of the wells and the condition of the protective casing and surface pad as well as the surrounding area and access. Neglect of these wells could lead to failure of the surface seals and lead to the potential for migration of contamination from surface sources into the subsurface. Also, protection of these locations should be maintained as construction activities increase in the transitioned parcels. In the long-term this could impact the monitoring results that are used to evaluate the effectiveness of the remedies.

This issue should be addressed by DOE. An inspection of the known long-term monitoring locations should be made and corrective action implemented to address the 4 issues. Corrective action should be implemented by April 30, 2007.

### **9.3 Issue 6**

*6. Excessive vegetation is present around the OU-1 facility and structures and on the landfill surface.*

A routine maintenance program to address vegetation and general housekeeping needs to be established for the OU-1 area. During the inspection, excessive vegetation was noted around the treatment buildings, extraction wells, SVE wells, fence line, and drainage areas. Routine cutting of the vegetation would facilitate periodic inspection of the facility and appurtenances, reduce degradation of the concrete drainage channels, facilitate flow in the drainage channels, and reduce the likelihood of vermin in the buildings.

This issue should be addressed by DOE. Corrective action should be implemented by October 31, 2006.

### **9.4 Issue 7**

*8. Inadequate stormwater control is maintained on the southwestern corner of the landfill.*

A corrective action should be developed to address the inadequate stormwater controls on the southwestern corner of the OU-1 landfill. Ponding of water should be prevented in order to reduce the infiltration of water into the landfill that will ultimately lead to migration of contaminants from the soil into the groundwater.

This issue should be addressed by DOE. A corrective action plan should be developed by December 31, 2006 and implemented prior to the next walkover inspection for the evaluation of ICs at the Mound site that is forecast for February 2007.

### **9.5 Issue 8**

*9. Inadequate documentation and interpretation of operational and monitoring data for the OU-1 remedy is maintained.*

An annual report summarizing the hydraulic gradient determinations, groundwater monitoring data, and performance evaluations of the OU-1 pump and treatment and SVE systems should be prepared. Previous reporting was accomplished using the monthly reports prepared by the environmental restoration contractor. While monthly summaries of the data are beneficial, an annual summary would aid in the interpretation of the performance of the system and provide valuable information for future Five-Year Reviews.

This issue should be addressed by DOE. An annual report summarizing the hydraulic gradient determinations, groundwater monitoring data, and performance evaluations of the OU-1 pump and treatment and SVE systems will be prepared for each calendar year. The first report will be prepared by May 31, 2007.

## **10.0 Protectiveness Statements**

### **10.1 Institutional Controls (including Phase I)**

The remedy for Parcels D, H, 3, and 4 and ICs associated with Phase I are protective of human health and the environment because controls are functioning as intended. However, in order to ensure the long-term protectiveness of the remedy, adequate signage that informs visitors that fishing, as well as swimming and wading, is prohibited in the Parcel 4 retention basin should be installed.

### **10.2 Operable Unit 1**

The remedy for Operable Unit 1 is protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risks are being controlled through containment of the plume and control of access to the landfill. However, in order to ensure the long-term protectiveness of the remedy, adequate documentation and interpretation of the operational and monitoring data associated with the pump and treatment system should be maintained. Also, long-term monitoring locations should be adequately maintained to ensure that representative samples are obtained and to prevent possible impact to the aquifer via surface water infiltration.

### **10.3 Phase I Groundwater (MNA) Remedy**

The remedy for Phase I is expected to be protective of human health and the environment upon attainment of groundwater cleanup goals, through MNA. In the interim exposure pathways that could result in unacceptable risks are being controlled through ICs that prevent the groundwater from being used in the restricted area. However, in order to ensure the long-term protectiveness of the remedy, long-term monitoring locations should be adequately maintained to ensure that representative samples are obtained and to prevent possible impact to the aquifer via surface water infiltration.

End of current text

## **11.0 Next Review**

This is the second statutory Five-Year Review for this site. The next Five-Year Review will be conducted in the year 2011.

End of current text

## 12.0 References

- U.S. Department Of Energy (DOE) 1995. *Record of Decision for Operable Unit*, Final June.
- DOE 1997. *Mound 2000 Residual Risk Evaluation Methodology*, Final, January.
- DOE 1999a. *Record of Decision for Release Block D*, Final, February.
- DOE 1999b. *Record of Decision for Release Block H*, Final, June.
- DOE 1999c. *Work Plan for Environmental Restoration of the DOE Mound Site, the Mound 2000 Approach, Revision 0 – Final*, February.
- DOE 2000. *OU-1 Pump and Treatment Operation and Maintenance Plan*, March.
- DOE 2001a. *CERCLA Five-Year Review Report for the Operable Unit 1 Remedy at the U.S. Department of Energy Miamisburg Environmental Management Project*, September.
- DOE 2001b. *Parcel 3 Record of Decision*, Final, August.
- DOE 2001c. *Parcel 4 Record of Decision*, Final, February.
- DOE 2002. *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property*, Final, June.
- DOE 2003a. *Phase I Record of Decision*, Final July.
- DOE 2003b. *Operations and Maintenance Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property*, Rev. 0.
- DOE 2003c. *Rebound Test Plan for Operable Unit 1 Groundwater System at the Miamisburg Closure Project*, Final, June.
- DOE 2003d. *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property*, Final, June.
- DOE 2004a. *Phase I Groundwater Monitoring Plan*, Final September.
- DOE 2004b. *Miami-Erie Canal Record of Decision*, Final, September.
- DOE 2004c. *Residual Risk Evaluation – OU-4 Miami-Erie Canal Area*, Final, May.
- DOE 2004d. *Operable Unit 1 (OU-1) Technical Team Evaluation – Recommendations to the Mound Core Team*, Final, June.

- DOE 2004e. *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property*, Final, July.
- DOE 2005a. *Operable Unit 1 Groundwater Rebound Test*, April.
- DOE 2005b. *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property*, Final, July.
- DOE 2006a. *Data Report for the Field Investigation to Determine the Nature of Cr and Ni in Offsite Stainless Steel Wells Screened in the Buried Valley Aquifer*, Final, February.
- DOE 2006b. *Phase I Groundwater Monitoring Report (January 2004 through November 2004)*, Draft Final, February.
- DOE 2006c. *Phase I Groundwater Monitoring Report (January 2005 through November 2005)*, Final, May.
- DOE 2006d. *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property*, Final, June.
- U.S. Environmental Protection Agency (EPA), 2001. *Comprehensive Five-Year Review Guidance*, OSWER 9355.7-03B-P, October.

## **Appendix A**

### **Deeds for Parcels D, H, 3, and 4**

End of current text

**Parcel D**



2/1/99

Montgomery County  
DEED-99-141468 0006  
Joy Clark, Recorder  
\$30.00 12/21/99 07:59:27

\$150.00 11/22/02 11:26:45  
DEED-02-146503 0036  
Montgomery County  
Judy Dodge Recorder

DV/2,9

**QUITCLAIM DEED**

K46-5-1-11

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel D:

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30, Fractional Town 2, Range 5 Miami Rivers Survey (M.R.S.), and being part of City of Miamisburg Lot No. 2259 and being part of tract of land conveyed to the United States of America as described in deed book 1214, page 12-14 and, being more fully described in Exhibit A attached hereto and incorporated herein.

0023296 \$ .00

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

TRANSFERRED  
99 DEC 20 AM 9:18  
A. J. WAGNER  
AUDITOR

1  
DEED 99-0852 B05

Note:  
Deed is being re-recorded to add  
Exhibit B.

26048.3

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

1.1 Excepting those soils in an area approximately 40 feet wide and 218.17 feet long, bounded on the east by the centerline of Mound Road as described above, Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block D, Mound Plant, Miamisburg, Ohio dated January, 1999) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

- (1) single or multifamily dwellings or rental units;
- (2) day care facilities;
- (3) schools or other educational facilities for children under eighteen years of age; and
- (4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

- 1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.
2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.
3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.
- 3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.
- 3.2 **Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.
- 3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this

19 day of November, 1999.

UNITED STATES OF AMERICA

*Laura A. Breckbill*

WITNESSETH:

*Linda Greiser*  
*Linda Greiser*  
*Lorinda LaBuc*  
*Lorinda LaBuc*

State of Ohio )  
County of Montgomery ) SS.

Before me, a Notary Public in and for said State and County, appeared this 19 day of November, 1999, SASAN BRECKBILL, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.



*Randolph Torrey*  
Notary Public  
RANDOLPH T. TORREY, Attorney-at-Law  
Notary Public, State of Ohio  
My Commission has no expiration date.  
Section 147.03 O. R. C.

This document was prepared by the U.S. Department of Energy.

**NO PLAT REQUIRED**

(SEC 711.131 ORC)

**MIAMISBURG CITY PLANNING COMMISSION**

*Jessamine J. Baker*  
Secretary

DEED 99-0852 B08

DESCRIPTION OF

12.429 Acres

located in

Section 30, Fractional Town 2, Range 5 MRS

part of

City of Miamisburg Lot No. 2259

DIV/2,9

K46-5-1-11

December 09, 1999

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30, Fractional Town 2, Range 5 M.R.S. and being part of City of Miamisburg Lot No. 2259 and being part of a tract of land conveyed to The United States of America as described in Deed Book 1214, Page 12-14 and being more particularly described as follows:

**COMMENCING** at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, **THENCE** with the north line of said Section 30 and the northerly line of Fractional Township 2, Range 6 MRS, **South 84° 00'12" East for a distance of 1249.75 feet** to the Northwest corner of the Roads End Plat as recorded in Plat Book DD, Page 75 and the centerline of Mound Road extended north, (witness a 5/8" Rebar Found bearing South 63° 34'50" East at a distance of 0.30 feet from the Northwest corner of said Plat);

**THENCE** with said Centerline of Mound Road, **South 05° 32'42" West for a distance of 2490.95 to a Mag Nail Set at the TRUE POINT OF BEGINNING** of the herein described tract;

**THENCE** continuing with said centerline, **South 05° 32' 42" West for a distance of 218.17 feet to a Railroad Spike Found** by common report at the Northeast corner of a 0.78 Acre tract of land conveyed to Randall & Rita Hilgefert as described in Deed MF 97-0746-A08;

**THENCE** with said 0.78 Acre Hilgeferts North line, **North 85° 28'23" West for a distance of 111.00 feet to a 5/8" Rebar Set** at said 0.78 Acre Hilgeferts Northwest corner, (passing a 5/8" Rebar Set at 30.00 feet);

**THENCE** with said 0.78 Acre Hilgeferts West line and the West line of a 0.26 Acre tract conveyed to Betty J. Eckhart as described in Deed MF 98-0834-C09 and the West line of a 0.7 Acre tract conveyed to Melissa A. Wilson as described in Deed MF 89-0125-D01 and the West Line of the Miami Mound Plat as recorded in Plat Book 94, Page 34, **South 07° 06'56" East for a distance of 714.44 feet to a IP in Concrete Found** at the Southwest corner of said Miami Mound Plat;

DEED

99-0852

B09

**THENCE** with the Southerly line of said City of Miamisburg Lot No. 2259, **North 84° 32'54" West for a distance of 613.34 feet to a 5/8" Rebar Set;**

**THENCE** on a new division line, **North 05° 34'05" East for a distance of 291.47 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line, **North 84° 25' 51" West for a distance of 93.50 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line, **North 05° 34'05" East for a distance of 360.00 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line, **South 84° 26'02" East for a distance of 35.50 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line, **North 05° 34'05" East for a distance of 131.23 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line on a **TANGENT CURVE to the RIGHT** with a **RADIUS of 130.00 feet, a DELTA ANGLE of 89° 20'20", a ARC LENGTH of 202.72 feet with a CHORD BEARING of North 50° 14'15" East for a CHORD DISTANCE of 182.80 feet to a 5/8" Rebar Set;**

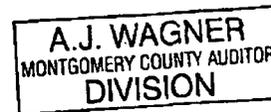
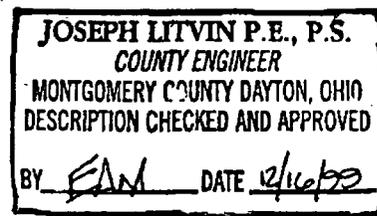
**THENCE** continuing on a new division line, **South 85° 05'35" East for a distance of 496.88 feet BACK TO THE TRUE POINT OF BEGINNING**, (passing a 5/8" Rebar set at 466.88 feet).

Described tract contains 12.429 Acres more or less. North based on State Plane Coordinates, South Zone State of Ohio as taken from a drawing prepared by Lockwood, Jones and Beals dated 6-01-82, Project No. 2149. This Description is based on an actual Field Survey performed by HLS Surveyors and Engineers under the direct supervision of William C. LeRoy P.S. Ohio License Number 7664. Subject to all Easements, Highways, Covenants and Restrictions of Public Record.



William C. LeRoy P.S.  
Ohio License No. 7664  
12-9-99

PARCEL D MOUND 99152PD



DEED

99-0852

B10

Exhibit B

**CERCLA 120(h) SUMMARY  
NOTICE OF HAZARDOUS SUBSTANCES  
Release Block D,  
Mound Plant, Miamisburg, Ohio**



February, 1999

FINAL



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

MAR 18 1999

REPLY TO THE ATTENTION OF:

SRF-6J

Mr. Richard B. Provencher  
Director  
U.S. Department of Energy  
Miamisburg Environmental Management Project  
P.O. Box 3020  
Miamisburg, OH 45343-3020

RE: U.S. DOE Mound Plant  
Release Block D  
Request for Concurrence to Transfer

Dear Mr. Provencher:

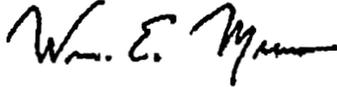
Thank you for your letter dated February 25, 1999, requesting concurrence to transfer Release Block D at the United States Department of Energy (U.S. DOE) Mound Plant in Miamisburg, Ohio.

The United States Environmental Protection Agency (US EPA) has reviewed the *Record of Decision for Release Block D, Mound Plant, Miamisburg, Ohio, Final, March 1999*, which has now been signed by U.S. DOE, U.S. EPA, and the Ohio Environmental Protection Agency, and the *Environmental Summary - Notice of Hazardous Substances for Release Block D, Mound Plant, Miamisburg, Ohio, Final, February 1999*. Based upon this information, U.S. EPA concurs that all remedial action necessary to protect public health and the environment with respect to any substance remaining in Release Block D has been taken, and that transfer of Release Block D may take place.

It is understood that any additional remedial action found to be necessary in the future shall be conducted by U.S. DOE to the extent necessary to protect human health and the environment.

The U.S. EPA fully supports redevelopment and reuse of the structures and other property available at the Mound Plant. However, assurances must be provided that all property and building leases and transfers will be protective of public health and the environment. If you have any questions or concerns about this or future economic development issues at the site, please contact Timothy Fischer, of my staff, at (312) 886-5787.

Sincerely yours,



William E. Muno, Director  
Superfund Division  
U.S. EPA, Region 5

cc: Gary Schafer, SRF-5J  
Tim Thurlow, ORC  
Graham Mitchell, Ohio EPA  
Brian Nickel, Ohio EPA  
Jeff Hurdley, Ohio EPA - Columbus  
Ruth Vandegrift, ODH  
Art Kleinrath, US DOE-MEMP  
Debbie White, US DOE-MEMP

## ACRONYMS

BDP	Building Data Package
BIO	Basis of Interim Operation
BVA	Buried Valley Aquifer
CAS	Chemical Abstracts Service
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
DOE	Department of Energy
EA	Environmental Assessment
FONSI	Finding of No Significant Impact
IDM	Investigative Derived Material
MMCIC	Miamisburg Mound Community Improvement Corporation
MOA	Memorandum of Agreement
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NFA	No Further Assessment
NPL	National Priority List
ODH	Ohio Department of Health
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
pCi	picocurie
PAH	Polynuclear aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PRS	Potential Release Site
RB	Release Block
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RRE	Residual Risk Evaluation
US DOE	United States Department of Energy
US EPA	United States Environmental Protection Agency
UST	Underground Storage Tank

**CERCLA 120(h) SUMMARY  
NOTICE OF HAZARDOUS SUBSTANCES  
RELEASE BLOCK D  
MOUND PLANT, MIAMISBURG, OHIO**

**I. PURPOSE**

The information contained in this notice is required under the authority of regulations promulgated under Section 120 (h) of the Comprehensive Environmental Resource Compensation and Liability Act (CERCLA). This summary is intended to support the transfer by deed to new ownership for economic development by documenting that the U.S. Department of Energy's (US DOE) Mound Plant has met the requirements of CERCLA 120 (h) for Release Block D (RB D). A copy shall be provided to all future owners.

**II. PROPERTY DESCRIPTION**

**A. Description of Property Suitable for Transfer:**

Situate in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

Beginning at a iron spike, being the North East corner of Section 35 and the South East corner of Section 36, said point being the center of Benner Road (40 feet R/W) and being referenced North  $84^{\circ} 27' 09''$  West 3102.92 feet from spike (0.5' deep) at the intersection of the center line of Mound Road (60 feet R/W) with the centerline of said Benner Road in said City of Miamisburg, and being the point of beginning for the land herein described, thence S  $84^{\circ} 28' 03''$  E 1333.66 feet along the center line of Benner Road to a railroad spike (0.2' deep) located in the center of Benner Road, thence N  $4^{\circ} 44' 28''$  E 2010.06 feet to a concrete monument, thence N  $83^{\circ} 57' 37''$  W 34.19 feet to a concrete monument being the TRUE POINT OF BEGINNING; thence N  $84^{\circ} 31' 10''$  E 613.33 feet to a point, thence N  $5^{\circ} 35' 49''$  E 291.47 feet to a point, thence N  $84^{\circ} 24' 07''$  W 93.5 feet to a point, thence N  $5^{\circ} 35' 49''$  E 360.00 feet to a point, thence S  $84^{\circ} 24' 18''$  E 35.50 feet to a point, thence N  $5^{\circ} 35' 48''$  E 131.13 feet to a point, thence along the arc of a curve to the right having a radius of 130 feet for a distance of 203.83 feet to a point, thence S  $85^{\circ} 04' 40''$  E 495.72 feet to a point located in the center of Mound Road, thence along the centerline of Mound Road S  $5^{\circ} 33' 37''$  W 218.17 feet to an railroad spike, thence N  $85^{\circ} 26' 39''$  W 111.00 feet to and iron pipe, thence S  $7^{\circ} 05' 12''$  E 714.44 feet to the true point of beginning containing 12.43 acres more or less, and subject to all legal highways and easements of record.

Release Block D (Figure II.1) is located in the southeast corner of the

developed area of the plant. RB D is generally bounded to the south by the "South Property" (the undeveloped portion of the Mound Plant), to the east by offsite residences, to the north by a parking lot and group of small buildings (numbered 39, 77, 78, 97, 95, 101 and 102), and to the west by a fenced area for storage of Investigative Derived Material (IDM) (just west of Building 100). There are two (2) main structures in RB D, Building 100 and Building 105.

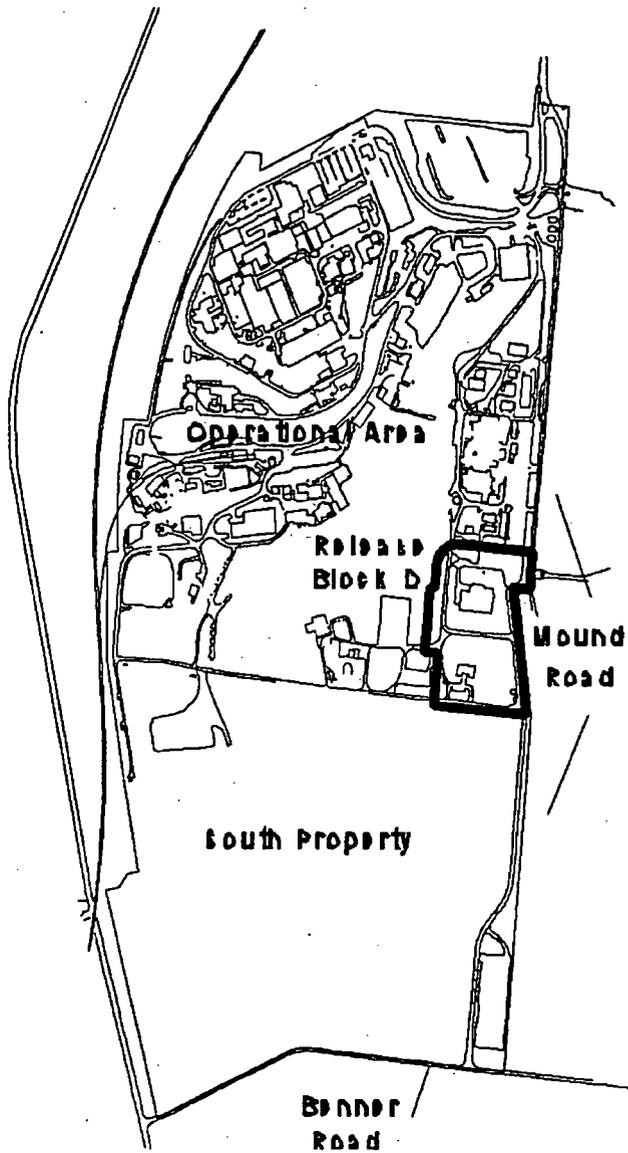
**B. Regional Context of Mound Plant and Transferred Property:**

The Mound Plant occupies approximately a 306 acre site in Montgomery County within the City of Miamisburg, Ohio. The northern boundary of the plant is approximately 0.13 miles south of Mound Avenue in Miamisburg. Benner Road forms the southern boundary of the plant, and the Conrail Railroad roughly parallels the western boundary at a distance of 50-200 feet. The Mound Plant consists of the Operational Area and the New Property (also referred to as the South Property). Approximately 130 buildings with a total of 1.4 million square feet of floor space existed at one time at the Mound Plant (although the number of buildings is constantly diminishing as buildings are decommissioned and demolished), all of which were located in the Operational area.

**C. Historical Uses of Property**

Two main structures in Release Block D include Building 105, which was built in 1990 as a machine shop. The other is Building 100, which was a Guard Force Precinct bunker. Both buildings are currently leased for industrial purposes. Portions of Release Block D were previously used for storage of trailers, roll-off boxes, small above-ground tanks and other assorted containers, as well as ground disposal of soils and construction spoils. Also located on the block was a large sewer manway/dump station. No other uses of the area of the Mound facility referred to as Release Block D are known.

**FIGURE II.1 Location of Release Block D**



### III. ENVIRONMENTAL FINDINGS

#### A. Methodology:

In accordance with Section 120 (h)(3) of CERCLA, to the extent that information is available based on a complete search of DOE files, the following shall be placed in deeds: (1) a notice of the type and quantity of hazardous substances stored, disposed of, or released; (2) a notice of the time at which such storage, disposal, or release took place; and (3) a description of any remedial action taken. Information sources reviewed to obtain the information include:

- ▶ Federal Government records
- ▶ Recorded chain of title documents
- ▶ Reasonably obtainable aerial photographs
- ▶ Visual inspection of the property and adjacent properties
- ▶ Reasonably obtainable records of releases on adjacent properties
- ▶ Interviews with current or former employees
- ▶ Sampling, if appropriate under the circumstances

RB D includes a collection of individual areas called Potential Release Sites or PRSs that have undergone previous investigations. The PRSs in RB D were identified on the basis of potential radiological and chemical (non-radioactive) contamination using knowledge of historical land use or on actual measurements of contaminants. Before transfer of a release block can be completed, all buildings and PRSs must be evaluated for protectiveness or remediated to be protective. Any residual risks associated with remaining contamination in RB D have been evaluated.

A Core Team with representatives from the US Department of Energy (DOE), US Environmental Protection Agency (US EPA), and Ohio EPA (OEPA) perform a joint agency evaluation of each of the potential contamination problems and recommend the appropriate response. The Core Team uses process knowledge, site visits, and existing data to determine whether or not any action is warranted concerning the possible problem area.

This summary is a result of a thorough Core Team analysis of information contained in the following reference documents:

1. Building Data Packages (BDP) for Buildings Located within Release Block D. The locations of these buildings are shown on Figure III.1. The rationale for designation is outlined in Table III.1.

*Provides notice for buildings of the type and quantity of hazardous substances stored, disposed of, or released and a notice of the time at which such storage, disposal, or release took place, if known as a result of the review of the seven sources of information listed in Section A.*

- a. Mound Plant, Building Data Package, Building 100  
Located within Release Block D, Final, November 4, 1997.
- b. Mound Plant, Building Data Package, Building 105  
Located within Release Block D, Final, November 4, 1997.

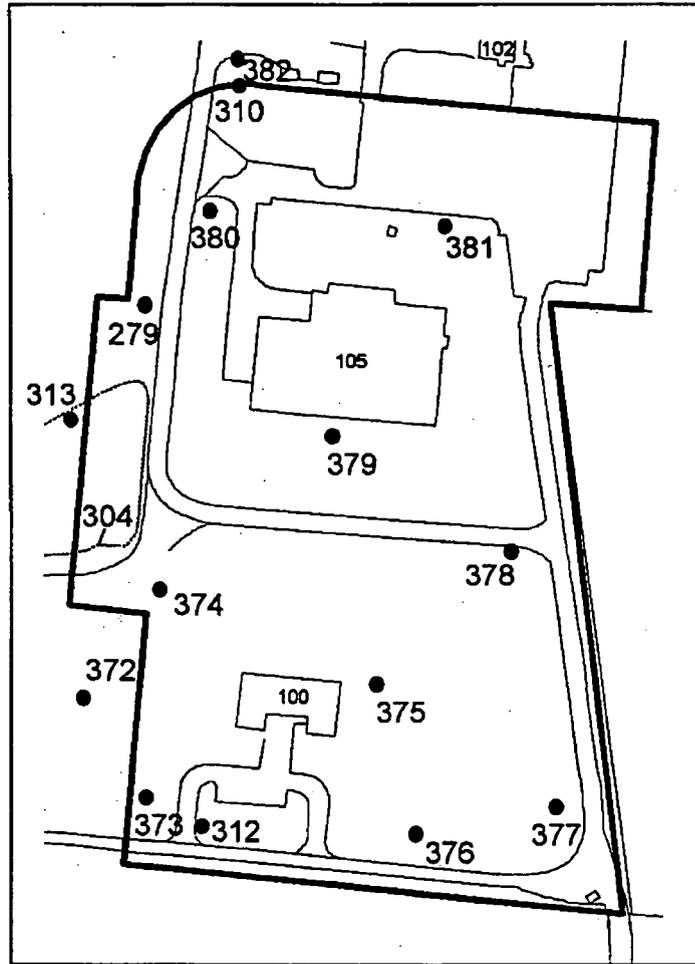
2. Potential Release Site (PRS) Data Packages for PRSs located within Release Block D. The locations of these PRSs are shown on Figure III.1. The rationale for designation of RB D PRSs is outlined in Table III.1.

*Provides notice for soil and groundwater of the type and quantity of hazardous substances stored, disposed of, or released and a notice of the time at which such storage, disposal, or release took place, if known, as a result of the review of the seven sources of information listed above.*

Potential Release Sites (PRSs) in RB D were identified on the basis of potential radiological and chemical (non-radioactive) contamination using knowledge of historical land use or on actual measurements of contaminants. The primary sources of potential radioactive contamination in RB D resulted from wastewater treatment, storage of radioactive materials, and ground disposal of soils and construction spoils.

- a. Mound Plant, Potential Release Site Package, PRS # 279, Final, Revision 2, November 19, 1996.
- b. Mound Plant, Potential Release Site Package, PRS # 304/313, Final, Revision 1, July 28, 1997.
- c. Mound Plant, Potential Release Site Package, PRS # 310, Final, Revision 4, February 26, 1997.
- d. Mound Plant, Potential Release Site Package, PRS # 312, Final, Revision 3, December 5, 1996.
- e. Mound Plant, Potential Release Site Package, PRS # 372/374, Final, Revision 2, November 19, 1996.
- f. Mound Plant, Potential Release Site Package, PRS # 375/377/378, Final, Revision 2, November 19, 1996.
- g. Mound Plant, Potential Release Site Package, PRS # 376, Final, Revision 1, November 27, 1996.
- h. Mound Plant, Potential Release Site Package, PRS # 379, Final, Revision 2, November 19, 1996.
- i. Mound Plant, Potential Release Site Package, PRS # 380/381, Final, Revision 4, February 26, 1997.
- j. Mound Plant, Potential Release Site Package, PRS # 382, Final, Revision 4, February 26, 1997.

FIGURE III.1 PRSs and Buildings Within Release Block D



**TABLE III.1 Release Block D PRSs/Buildings and Conclusions**

PRS / Bldg	Reason for Identification	Joint Agency Decision (DOE & EPA)	Close Out of PRS / BDP
279	Location of the Old Firing Range Drum Storage Area	No Further Assessment	Recommendation for NFA signed on 10/18/95
304	Past use as a soil disposal area - thorium contamination.	Removal Action conducted in October 1998.	OSC Report signed on 12/17/98.
310	Elevated cesium-137 sample location	No Further Assessment	Recommendation for NFA signed on 1/14/97
312	Elevated thorium sample location	No Further Assessment	Recommendation for NFA signed on 10/18/95
313	Elevated thorium sample location	No Further Assessment	Recommendation for NFA signed on 2/19/97
372/374	Elevated qualitative soil gas detections	No Further Assessment	Recommendation for NFA signed on 5/8/96
373	Elevated plutonium sample location	No Further Assessment	Recommendation for NFA signed on 10/18/95
375/377/378	Elevated qualitative soil gas detections	No Further Assessment	Recommendation for NFA signed on 5/8/96
376	Elevated plutonium sample location	No Further Assessment	Recommendation for NFA signed on 10/3/96
379	Elevated plutonium sample location	No Further Assessment	Recommendation for NFA signed on 10/18/95
380/381	Elevated qualitative soil gas detections	No Further Assessment	Recommendation for NFA signed on 5/8/96
382	Elevated qualitative soil gas detections	No Further Assessment	Recommendation for NFA signed on 1/14/97
Bldg. 100	Building used as machine shop	No Further Assessment	Recommendation for NFA signed on 8/5/97
Bldg. 105	Building used as guard force precinct	No Further Assessment	Recommendation for NFA signed on 8/5/97

3. **Residual Risk Evaluation, Release Block D, Final, December 1996. Provides the evaluation of human health risks associated with any residual contamination that may remain in the block after all remedies within a parcel have been completed. The evaluation ensures that future users of the land will not be exposed to contamination levels that would pose unacceptable health risks. This document should be used in conjunction with Items 6 & 7 below.**
4. **On Scene Coordinator (OSC) Report for PRS 304, Mound Plant, December, 1998. Summary report prepared to record the threat, describe the chronology of action(s) taken, and discuss effectiveness of remedial action.**
5. **Proposed Plan for Release Block D, Mound Plant, Miamisburg, Ohio, Final, December, 1998. Identifies the preferred option for addressing the contamination at the Mound Site, Release Block D to the public by briefly summarizing the alternatives studied and highlighting the key factors that led to identifying the preferred alternative.**
6. **Technical Position Report In Support of the Release Block D Residual Risk Evaluation, Final, Revision 0, January 1999. Supplemental review of key risk data for soil and groundwater related pathways. This document should be used in conjunction with Items 1 & 7.**
7. **Residual Risk Evaluation (RRE) - Release Block D Revision Summary, Mound Plant, Miamisburg, Ohio, Final, January 1999. Supplemental prepared for Item 3 above as a result of additional information obtained from a recent radiological survey and sampling event conducted in the fall of 1998. This document contains the final risk evaluation for RB D and should be used in conjunction with Items 1 & 6 above.**
8. **Record of Decision (ROD) for Release Block D, Mound Plant, Miamisburg, Ohio, Final, March, 1999. Documents the remedial action plan for a site and serves the following three functions: (1) certifies the remedy selection process was carried out in accordance with CERCLA, (2) describes the technical parameters of the remedy, specifying the treatment, engineering, and institutional components as well as clean up levels, and (3) provides the public with a consolidated summary of information about the site and the chosen remedy, including the rationale behind the selection.**

## Results Summary:

### 1. Building Data Analysis:

A joint agency decision between DOE, the US EPA, and OEPA has determined no contamination within Buildings 100 and 105 warrants a remedial action and no environmental concerns are associated with Buildings 100 or 105. Lease or sale of Building 100 and 105 for commercial/industrial use is protective of human health and the environment. A brief summary follows. For a more detailed description of each, refer to the building data packages as identified in Section III.A.1 of this report.

#### a. Asbestos

Asbestos material in buildings can be found in five forms: sprayed or troweled on ceilings and walls (surfacing materials); insulation around pipes, ducts, boilers and tanks (pipe and boiler insulation); transite (in ground piping); roofing materials (roofing felts); and other products such as ceiling and floor tiles and wall boards (miscellaneous materials). A Building 105 facility review conducted in June, 1994 indicated no asbestos in the building. Additionally, both buildings were constructed after 1983 when the EPA's ban went into effect for friable asbestos containing materials.

#### b. Lead Paint

Lead based paint was used almost exclusively in the U.S. prior to the 1970's. Congress established maximum lead concentrations in residential paint in 1978. Due to the age of the buildings (100 was constructed 1988 and 105 constructed in 1986), no lead based paint was believed to have been used within the buildings.

#### c. Radon

The results of a 1989-1990 Mound indoor radon study indicated an average radon concentration of 0.5 picocuries/liter in Building 105 and 1.0 picocuries/liter in Building 100 as compared to the EPA recommended

standard for radon of 4.0 picocuries/liter.

d. **Radiological Surveys**

There is no history of radiological processes performed in or around Buildings 100 or 105. Radiation surveys were conducted in both buildings during safe shutdown activities prior to lease. No direct or removable contamination was found on the building floors, corridors or stairways.

e. **Polychlorinated Biphenyls (PCB's)**

Fluorescent lighting fixtures were used in Buildings 100 and 105. Fluorescent lamp ballasts contain a small capacitor that may contain PCBs. All lamp ballasts manufactured before 1979 should be regarded as containing PCBs. These buildings were constructed after 1983, therefore assumed not to contain PCBs in the lamp ballasts. No wet type transformers were utilized.

2. **Results of Potential Release Site Soil Data Analysis:**

The US DOE, US EPA and OEPA have jointly decided that no additional remedial action of PRSs in RB D is necessary with the placement of Institutional Controls in the form of deed restrictions on future land use for RB D upon transfer.

Risks are quantified for both carcinogenic and non-carcinogenic contaminants. The risk associated with the intake of a known or suspected carcinogen is reported in terms of the incremental lifetime cancer risk presented by that COC, as estimated using the appropriate slope factor and the amount of material ingested. Residual levels of contamination that remain on RB D for carcinogens indicate a probability or likelihood of one chance in 10,000 to one chance in 1,000,000 of an individual developing cancer based on industrial use scenario. This probability or likelihood is consistent with the US EPA target risk range.

Potential human health hazards from exposure to non-carcinogenic contaminants are evaluated by using a Hazard Quotient (HQ). The HQ is determined by the ratio of the intake of a COC to a reference dose or concentration for the COC that is believed to represent a no-observable effect level. The COC-specific HQs are then summed to provide an overall Hazard Index (HI). US EPA guidance sets a limit of 1.0 for the Comprehensive HI. The HIs for the future groundwater scenarios, however, are near or above the 1.0-limit. This is based on the bedrock groundwater contaminants flowing directly to the BVA that supplies drinking water for the plant. As a result, the selected remedy prohibits the use of bedrock groundwater. This institutional control, in the form of a deed restriction, will ensure that the residual risks associated with RB D remain acceptable.

Evaluation of residual contaminants within RB D have resulted in a determination that future users of the land will not be exposed to contaminant levels that would pose unacceptable risks as long as compliance with the deed restrictions described in the RB D Record of Decision are maintained. Remediation activities are nearing completion for adjacent property to the west. Remediation activities and additional assessment activities are scheduled in the future for adjacent properties to the north. The Mound site has experience with environmental remediation of both soils and buildings. Each removal action will be designed with containment methods to prevent migration via air pathways, surface water pathways and groundwater pathways. Stormwater management and sediment erosion control will be outlined in each of the decontamination and/or demolition project work plans. DOE believes that no additional contamination of RB D is likely from adjacent activities.

A brief summary of the history of the RB D PRSs and measurements follows. For a more detailed description of each, refer to the PRS data packages as identified in Section III.A.2 of this report:

- a. At PRS 310, elevated cesium-137 was found in a surface soil sample in 1987, and was remediated immediately upon its detection. In December 1991, soil samples were again collected from this area. Of the 28 samples collected, two had cesium-137 concentrations above the detection limit. At the same location, 25 samples were analyzed for radium-226. All samples contained detectable concentrations of radium-226. In 1995, additional soil samples collected in this area did not indicate the presence of cesium-137 or any other contaminant.
- b. At PRS 373, PRS 376 and PRS 379, plutonium-238 was detected in surface samples in 1994, 1995 and 1996, respectively, and found (as measured by the Mound Soil Screening Laboratory) at or slightly above the method detection limit. The surface samples with detectable plutonium-238 concentrations were shown (by surrounding samples) to be isolated to the PRS locations only.
- c. At PRS 312, a surface sample collected in 1993 indicated an elevated thorium-232 concentration of 5.02 pCi/g. Nearby samples did not indicate elevated levels, suggesting the elevated result was an isolated event.
- d. PRS 279 was identified based on photographs that showed drum storage at this location. Plutonium-238, cobalt-60, radium-226, and thorium-228 were measured in this area. This drum storage area had been incorrectly referred to as the Old Firing Range Storage Site which was believed to be used between 1970 and 1974. Subsequent reviews indicated the Old Firing Range was actually located at PRS 277.

There were no elevated soil gas measurements detected at this location. A deep (3 to 5 feet) soil sample near PRS 279 had detectable polynuclear aromatic hydrocarbons (PAHs) at an elevated concentration of approximately 59 mg/kg. This sample was a composite of four samples collected at the corners of a 30 foot x 30

foot square. A second composite prepared similarly from about 100 feet away found similar contaminants at 1 to 3 mg/kg. Other nearby sample locations nearby did not detect any of the contaminants. These chemicals are commonly associated with asphalt, which is present in the area.

A February 1996 soil sample in the vicinity of PRS 279 contained low levels of organic and inorganic compounds, plutonium-238, radium-226, and thorium-228.

- e. PRS 313, which neighbors PRS 304, was a soil segregation area that contained the overburden soils excavated from the decommission and decontamination of a waste transfer line (PRS 300) and from Area 12 (PRS 273). PRS 313 was identified due to an elevated thorium result. Sampling in 1995 in the area of PRS 313 indicated no contaminants in excess of guideline criteria.
- f. PRS 304 was identified as a former soil disposal area. PRSs 304/313 were originally binned NFA on February 19, 1997, based on data existing at that time. However, a recent radiological survey and sampling event conducted in the fall of 1998 identified two small "hot spots" which were subsequently removed. The results from the 1998 removal actions are available in the "On Scene Coordinator (OSC) Report for PRS 304 Removal Action, December 1998."

**C. Summary of All Soil and Groundwater Contaminants Detected**

Table III.2 and Table III.3 presents a summary of all soil and groundwater contaminants above the detection limit. The American Chemical Society's Chemical Abstracts Service Registry Number (which is a numeric designation and uniquely identifies a specific chemical compound) is provided where available. Background levels are also provided where available.

Table III.2 Summary Table of All Soil Contaminants Detected in Release Block D					
Soil contaminants above detection limit	CAS Registry Number	Maximum concentration Any Depth	Maximum concentration Shallow - only	Soil background	Detects / Analyses
<b>ORGANICS (mg/kg)</b>					
Acenaphthene	83-32-9	6.4	3.80		10/55
Acenaphthylene	208-96-8	0.22	0.029		4/53
Acetone	67-64-1	0.23	0.210		21/47
Alpha Chlordane	5103-71-9	0.086	—		2/74
Anthracene	120-12-7	11.65	4.8		16/60
Aroclor-1248	12672-29-6	0.059	0.059		1/60
Aroclor-1254	11097-69-1	0.3025	0.3025		1/60
Benzene	71-43-2	0.001	—		1/63
Benzo(a)anthracene	56-55-3	41.5	6.8		24/61
Benzo(a)pyrene	50-32-8	33.5	7.5		25/60
Benzo(b)fluoranthene	205-99-2	53	12		24/60
Benzo(g,h,i) perylene	191-24-2	3.9	3.9		15/60
Benzo(k)fluoranthene	207-08-9	1.3	1.3		13/61
Benzoic Acid	65-85-0	0.750	0.750		6/52
Beta-BHC	319-85-7	0.360	0.360		5/78
Bis(2-ethylhexyl)phthalate	117-81-7	4.2	3.650		43/60
Bromoform	75-25-2	0.002	0.001		3/63
2-Butanone	78-93-3	0.028	0.010		4/24
Carbazole	86-74-8	0.165	0.165		2/13
Carbon Disulfide	75-15-0	0.004	0.004		1/48
2-Chlorophenol	95-57-8	0.1	0.1		1/60
Chrysene	218-01-9	51.5	5.4		24/60
2,4-Dinitrophenol	51-28-5	0.970	0.970		4/72
Di-n-butyl phthalate	84-74-2	0.140	—		1/48
Di-n-octyl phthalate	117-84-0	0.089	0.089		1/48
Dibenz(a,h)anthracene	53-70-3	1.3	1.3		10/60
Dibenzofuran	132-64-9	3.8	3.0		12/60
Dibromochloromethane	124-48-1	0.001	0.001		2/63
Ethylbenzene	110-54-3	0.003	0.001		8/48
Fluoranthene	206-44-0	65	5.3		34/60
Fluorene	86-73-7	6.3	3.3		16/60
Indeno(1,2,3-cd)pyrene	193-39-5	20.5	4.7		17/60
2-Hexanone	591-78-6	0.011	0.008		2/63
Methoxychlor	72-43-5	0.0055	0.0055	30	1/61
2-Methylnaphthalene	91-57-6	1.4	1.4		12/59
4-Methyl-2-pentanone	108-10-1	0.002	—		1/24
Methylene Chloride	74-87-3	0.066	0.056		53/62

Table III.2 Summary Table of All Soil Contaminants Detected in Release Block D					
Soil contaminants above detection limit	CAS Registry Number	Maximum concentration Any Depth	Maximum concentration Shallow only	Soil background	Detects/Analyses
Naphthalene	91-20-3	1.9	1.9		14/60
N-Nitrosodiphenylamine	86-30-6	0.083	—		1/60
Pentachlorophenol	87-86-5	0.97	0.97		2/60
Phenanthrene	129-00-0	49.5	13		24/60
Phenol	108-95-2	0.120	0.120		1/60
Pyrene	129-00-0	62	3.4		35/61
Styrene	100-42-5	0.001	—		1/63
Toluene	108-88-3	0.016	0.004		31/51
1,1,1-Trichloroethane	71-55-6	0.0025	0.002		6/48
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.003	0.003		2/4
Tetrachloroethene	127-18-4	0.0295	0.027		30/63
Trichloroethene	79-01-6	0.00175	0.001		3/63
Xylenes, total	1330-20-7	0.019	0.005		17/48
<b>INORGANICS (mg/kg)</b>					
Aluminum	7429-90-5	24300	24300	19000	61/61
Antimony	7440-36-0	39.2	39.2		41/60
Arsenic (total)	7440-38-2	15.8	12.35	8.6	56/60
Barium (total)	7440-39-3	185	185	180	61/61
Beryllium	7440-41-7	1.8	1.8	1.3	47/49
Bismuth	7440-69-9	5.7	5.7		2/13
Cadmium (total)	7440-43-9	10.2	10.2	2.1	21/61
Calcium (total)	7440-70-2	276000	232000	310000	61/61
Chloride	16887-00-8	59	—	107	3/6
Chromium (total)	7440-47-3	29.6	28	20	61/61
Cobalt (total)	10198-40-0	15	15	19	59/61
Copper (total)	7440-50-8	33.1	30.5	26	61/61
Cyanide	57-12-5	1.0	1.0		33/54
Fluoride	16984-48-8	6.38	2.2	6.7	6/6
Iron (total)	7439-89-6	43600	38900	35000	61/61
Lead (total)	7439-92-1	35.8	35.8	48	61/61
Lithium	7439-93-2	25.3	25.3	26	9/10
Magnesium (total)	7439-95-4	64500	64500	40000	61/61
Manganese (total)	7439-96-5	757	746	1400	61/61
Mercury (total)	7439-97-6	1.8	0.71		25/60
Molybdenum	7439-98-7	14.5	2.3	27	9/11
Nickel (total)	7440-02-0	52.05	36.0	32	49/61
Nitrate	7697-37-2	2.07	—	26	1/1
Nitrate/Nitrite		3.7	3.7		10/13

Table III.2 Summary Table of All Soil Contaminants Detected in Release Block D					
Soil contaminants above detection limit	CAS Registry Number	Maximum concentration Any Depth	Maximum concentration Shallow only	Soil background	Detects/Analyses
Organic Carbon		10189.1	—		1/1
Potassium (total)	7440-09-7	2580	2580	1900	59/61
Silicon (total)	7440-21-3	1100	—		1/1
Silver (total)	007440-02-0	18.6	17.6	1.7	40/61
Sodium (total)	7440-23-5	2490	2490	240	57/60
Sulfate	14808-79-8	129	—	150	2/6
Thallium	7440-28-0	0.23	—	0.46	2/60
Tin	7440-31-5	1.7	1.7	20	7/9
Vanadium	7440-62-2	41	41	25	60/61
Zinc (total)	607440-66-6	754	238	140	61/61
<b>RADIONUCLIDES (pCi/g)</b>					
Actinium-227	14952-40-0	0.38	0.38		17/17
Americium-241	14596-10-2	0.05	0.05		17/24
Cesium-137	10045-97-3	1.7	1.7	0.42	43/79
Cobalt-60	10198-40-0	0.055	0.055		17/24
Lead-210	14255-04-0	2.91	2.91		17/17
Plutonium-238	13981-16-3	60	60	0.13	332/394
Plutonium-239/240	15117-48-3/ 14119-33-6	0.0196	0.0196	0.18	10/21
Potassium-40	13966-00-2	34.9	26.9	37	46/46
Radium-224	13233-32-4	12.2	12.2		25/25
Radium-226	13282-26-7	3.95	2.25	2	28/28
Radium-228					
Strontium-90	10098-97-2	0.854	—	0.72	1/5
Thorium-228	14274-82-9	3.57	3.57	1.5	18/18
Thorium-230	14269-63-7	5.75	5.75	1.9	34/39
Thorium-232	7440-29-1	7	7	1.4	221/393
Thorium-234	15065-10-8	1.48	1.17	1.2	25/25
Tritium	10028-17-8	0.58	0.58	1.6	5/14
Uranium-234	13966-29-5	1.14	1.14	1.1	19/19
Uranium-235	15117-96-1	0.1195	0.1195	0.11	16/19
Uranium-238	7440-61-1	1.14	1.14	1.2	19/24

**NOTE:**

Contaminants with no background available were left blank.

— No shallow data available.

**Table III.3. Summary Table of All Current Groundwater Contaminants Detected in BVA Production Wells**

Groundwater contaminant above detection limit	CAS Registry Number	Maximum concentration	BVA Background
<b>ORGANICS (mg/L)</b>			
Acetone	67-64-1	0.012	
Bromodichloromethane	75-27-4	0.0037	
2-Butanone	78-93-3	0.041	
Chloroform	67-66-3	0.0022	0.0005
1,1-Dichloroethane	75-34-3	0.0035	
1,1-Dichloroethene	75-35-4	0.0017	
1,2-Dichloroethene	540-59-0	0.0047	
1,2-cis-Dichloroethene	156-59-2	0.0021	0.0010
1,2-trans-Dichloroethene	156-60-5	0.003	
Dichloromethane - Methylene Chloride	75-09-2	0.0098	
Isophorone	78-59-1	0.010	
Tetrachloroethene	127-18-4	0.002	
1,1,1-Trichloroethane	71-55-6	0.0018	0.0007
Trichloroethene	79-01-8	0.0046	
Trichlorofluoromethane	75-69-4	0.0025	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.0087	
<b>INORGANICS (mg/L)</b>			
Alkalinity		335	
Aluminum	7429-90-5	0.0737	0.0375
Ammonia	7664-41-7	0.58	0.162
Barium	7440-39-3	0.0884	0.3102
Cadmium	7440-43-9	0.0077	
Calcium	7440-70-2	126	111
Chloride	16887-00-6	133	106
Chromium	7440-47-3	0.0249	0.0061
Copper	7440-50-8	0.593	0.0012
Dissolved Solids		719	603
Fluoride	16984-48-8	0.18	0.419
Iron	7439-89-6	0.780	4.065

**Table III.3. Summary Table of All Current Groundwater Contaminants Detected in BVA Production Wells (cont.)**

Groundwater contaminants above detection limit		Maximum concentration	BVA background
Manganese	7439-96-5	0.0248	0.2298
Nitrate/Nitrite		4.9	5.349
Nitrate	7697-37-2	2.55	
Nitrite	14797-65-0	0.066	
Nitrogen	7727-37-9	0.62	0.324
Organic Carbon		1.1	1.987
Phosphate	14265-44-2	0.22	0.231
Potassium	7440-09-7	3.8	4.461
Silver	7440-22-4	0.0242	
Sodium	7440-23-5	82.4	62.43
Sulfate	14808-79-8	83.0	142.7
Suspended Solids		8.0	26.44
Vanadium	7440-62-2	0.0244	0.0171
Zinc	7440-66-6	0.0577	0.1196
<b>RADIONUCLIDES (pCi/l)</b>			
Actinium-227	14952-40-0	0.335	
Bismuth-210	13982-38-2	0.39	
Plutonium-239/240	13981-16-3 / 15117-48-3	2.0	0.125
Radium-226	13982-63-3	0.4	0.996
Strontium-85	13967-73-2	25	
Strontium-90	10098-97-2	0.3	0.975
Thorium-228	14274-82-9	2.17	0.779
Thorium-230	14269-63-7	1.99	0.289
Thorium-232	7440-29-1	0.1	
Tritium	10028-17-8	7200	1485
Uranium-234	13966-29-5	8.14	0.792
Uranium-238	7440-61-1	8.25	0.688

3. **Other Factors Considered:**

DOE developed a generic checklist of the issues to be considered in evaluating property to be transferred. The list was developed using the Cross-Cut Guidance on Environmental Requirements for DOE Real Property Transfers and checklists used by the Department of Defense in releasing property. The list includes environmental problems from Mound Plant that are likely to concern a potential purchaser as well as items relating to the operational concerns from ongoing and future remedial actions. Table III.4 contains a brief summary and references for all factors considered. Results of only those factors with a recommendation for disclosure relating to RB D are presented as follows:

a. **Drinking Water**

Mound Plant has exceeded the action levels for lead and copper due to the corrosiveness of the water distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead, will be made available to all Mound drinking water users.

b. **Monitoring Equipment**

An easement will be executed between the US DOE and MMCIC prior to transfer of RB D to maintain access for continued monitoring and maintenance on the following. Questions regarding terms and conditions should be directed to the DOE Realty Officer, Ohio Field Office.

1. One monitoring well in bedrock (Well # 0351), exists to the west of the gravel road next to Building 100.
2. One air sampling station (#216) is located within the boundary of Release Block D.

TABLE III.4 Summary of Other Factors Considered for Release Block D, Mound Plant

FACTOR CONSIDERED	RB D DISCLOSURE?		RECOMMENDATION/CONCLUSION	REFERENCE
	YES	NO		
Cultural Resources		✓	There are no historic or cultural resources within RB D that would fall under a Memoranda of Agreement (MOA) or require deed restrictions to be put in place prior to transfer to limit alterations to the structures.	Correspondence From Mark J. Epstein, Department Head, Resource Protection and Review, Ohio Historic Preservation Office dated July 31, 1998.
Drinking Water Quality	✓		Mound Plant has exceeded the action levels for lead and copper due to the corrosiveness of the water distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead, will be made available to all Mound drinking water users.	Miamisburg Environmental Management Project, Annual Site Environmental Report for Calendar Year 1997, September 1998.
Endangered Species		✓	Two state protected species were found, the dark-eyed junco ( <i>Junco hyemalis</i> ) and the inland rush ( <i>Juncus interior</i> ). Because only one individual inland rush was located, it is not considered a viable breeding population at the Mound facility. The dark-eyed junco is not known to breed in southwestern Ohio. It has also been determined that the plant site is in the habitat range of the federally endangered species of Indiana Bat ( <i>Myotis sodalis</i> ), however, the Mound site does not provide a suitable habitat for the Indiana Bat. Neither the solitary stings of the rush and the junco, nor the potential habitat for the Indiana bat, are expected to affect ongoing or future activities at the site.	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994.

TABLE III.4 Summary of Other Factors Considered for Release Block D, Mound Plant

FACTOR CONSIDERED	RB D		RECOMMENDATION/CONCLUSION	REFERENCE
	DISCLOSURE			
	YES	NO		
Monitoring Equipment	✓		An easement will be executed between the US DOE and MMCIC prior to transfer of RB D to maintain access for continued monitoring and maintenance on the following. Questions regarding terms and conditions should be directed to the DOE Realty Officer, Ohio Field Office.	Groundwater Monitoring Program and Groundwater Protection Management Program Plan, April 1997, Revision 1.  Mound Plant Environmental Monitoring Plan dated July 1997.
National Environmental Policy Act (NEPA)		✓	A Finding of No Significant Impact (FONSI) was issued on October 27, 1994 for Commercialization activities at the Mound Plant.  Documented the rationale supporting the Categorical Exclusion for the proposed sale of Mound Plant under 10 CFR 1021, Appendix A to Subpart D, Section A.7 ("use unchanged").	The Mound Plant EA for Commercialization of the Mound Plant, DOE/EA-1001 dated October, 1994  FONSI for the Commercialization of the Mound Plant EA dated October 27, 1994.  December 8, 1995 memorandum from Nat Brown, Assistant Manager Compliance and Support, Ohio Field Office to George R. Gartrell, Director, Miamisburg Area Office.
Resource Conservation and Recovery Act (RCRA)		✓	DOE has found no RCRA regulated units within Release Block D warranting a RCRA closure action.  It has been determined that the closest facility boundary from Buildings 23 and 72 will not change with the sale of release block D. Therefore, the risk assessment information in the RCRA Part B Permit will not change.	RCRA Part B Permit Application, Volume I, Section A, September 1995 (as amended) Responses to Information Requested by the Ohio HWFB Technical Staff transmitted to Bob Brown of the State of Ohio Hazardous Waste Facility Board dated March 12, 1996.

TABLE III.4 Summary of Other Factors Considered for Release Block D, Mound Plant

FACTOR CONSIDERED	RBD DISCLOSURE?		RECOMMENDATION/CONCLUSION	REFERENCE
	YES	NO		
Safety Basis Risk		✓	<p>DOE Order 5480.23, "Nuclear Safety Analysis Reports", requires preparation of safety analysis to demonstrate adequate protection of health and safety of workers and the public. Accident scenarios have been identified which have the potential to impact the health and safety of the public. Changing the site boundaries, by transferring Release Blocks D decreases the fence line distance used in calculations of potential dose consequences for accidents having ground level releases.</p> <p>The Building 22 Basis for Interim Operation (BIO) was modified to account for the decreased buffer zone. The DOE approved BIO was implemented on 2/01/98.</p>	Correspondence from J. Kreuger, Waste Management Manager, Babcock and Wilcox of Ohio, Inc. to R. Provencher, Director, Miamisburg Environmental Management Project, 12/04/98.
Wetlands		✓	<p>Three characteristics must be present to be classified as jurisdictional wetlands: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetlands hydrology. Absence of any one of these characteristics removes an area from consideration. None of the sites examined within Release Block D constitute jurisdictional wetlands.</p>	<p>Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994.</p> <p>Correspondence, T. Ballieu, Director, Columbus Environmental Management Project to S. Smiley dated 08/27/98.</p>
Wild and Scenic Rivers		✓	<p>Section 8(a) of the statute withdraws all public land within Wild and Scenic Rivers Act designated areas from sale or other disposition except for leasing. There are no wild and scenic rivers located within RB D.</p>	Correspondence, S. Lewis, Ohio Department of Natural Resources to M. Gilliat, EG&G Mound Applied Technologies, Miamisburg, Ohio dated July 14, 1992.

#### **IV. FINDING OF SUITABILITY TO TRANSFER**

In accordance with provisions of CERCLA Section 120 (h), contaminated property can only be transferred if one of the following applies:

- (1) a remedial action has been taken that protects human health and the environment and EPA deems this conditions to be satisfied if a remedy has been constructed and is operating successfully,
- (2) a decision has been made that no remedial action is necessary.

This future industrial use of the Mound Plant has been determined based upon agreement among US DOE, US EPA and OEPA, and interested stakeholders. This land use is reflected in the Mound Comprehensive Reuse Plan of the Miamisburg Mound Community Improvement Corporation (MMCIC) and is currently codified in the City of Miamisburg Zoning Ordinance for industrial use.

A joint agency decision among the US DOE, US EPA and OEPA has been made that a remedial action has been taken that protects human health and the environment. EPA deems this condition to be satisfied if the Institutional Controls are implemented and operating successfully. Institutional controls in the form of deed restrictions on future land use will be placed on RB D upon transfer as part of the remedy. The objective of these institutional controls is to prevent an unacceptable risk to human health and the environment by restricting the use of RB D, including RB D soils, to that which is consistent with assumptions in the RB D RRE. DOE or its successors will retain the right and responsibility to monitor, maintain, and enforce these institutional controls. The following property deed restrictions and requirements will be imposed on the property to maintain protection of human health and the environment in the future:

- A. Ensure that industrial land use is maintained;
- B. Prohibit the use of bedrock ground water;
- C. Provide site access for Federal and State agencies for the purpose of sampling and monitoring; and
- D. Soils from RB D shall not be removed from the Mound Facility boundary without approval from the Ohio Department of Health (ODH).

**V. ENVIRONMENTAL COVENANTS:**

DOE is committed to include a covenant in accordance with Section 120 (h)(3) of CERCLA in the deed for the sale or transfer of the property that warrants that:

- A. All remedial action necessary to protect human health and the environment has been taken.
- B. Any additional response action or corrective action found to be necessary after the date of sale or transfer shall be conducted by the United States [Section 120(h)(4)(D)(i)]. The requirements of the covenant shall not apply in any case in which the person or entity to whom the property is transferred is a potentially responsible party with respect to the property.
- C. A clause granting the United States access to the property in any case in which a response action or corrective action is found to be necessary or such access is necessary to carry out a response action or corrective action on the adjoining property [Section 120 (h)(4)(D)(ii)]

**VI. NOTIFICATION/PUBLIC PARTICIPATION**

The community has been an active participant in this process to date. Comments from the public on the PRS and building disposition recommendations have been incorporated as part of the remedy evaluation. DOE believes all comments have been resolved with the commentor and the documents, comments, and responses have been placed in the CERCLA Public Reading Room.

Table VI.1 lists all RB D PRS packages, Building Data Packages, and the RB D RRE, along with the dates they were made available for public comment.

**Table VI.1 Release Block D Documents and Public Comment Periods**

<b>DOCUMENT (PRS/BUILDING)</b>	<b>COMMENT PERIOD (BEGIN)</b>	<b>COMMENT PERIOD (END)</b>
279	02/15/96	02/29/96
304/313	05/08/97	06/16/97
PRS 304 Action Memo	10/01/98	10/31/98
310	01/15/97	02/15/97
312	10/24/95	02/15/96
372/374	05/15/96	06/17/96
373	02/15/96	02/29/96
375/377/378	05/15/96	06/17/96
376	10/15/96	11/15/96
379	02/15/96	02/29/96
380/381	05/15/96	06/17/96
382	01/15/97	02/15/97
Building 100	09/04/97	10/20/97
Building 105	09/04/97	10/20/97
RB D Residual Risk Evaluation	08/21/96	09/20/96
Supplemental RB D Residual Risk Evaluation	12/22/98	01/21/99
Proposed Plan for RB D	12/22/98	01/21/98

Deed

Montgomery County  
DEED-99-141468 0006  
Joy Elark, Recorder  
\$30.00 12/21/99 07:59:27

DIV 12,9

QUITCLAIM DEED

K46-51-11

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel D:

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30, Fractional Town 2, Range 5 Miami Rivers Survey (M.R.S.), and being part of City of Miamisburg Lot No. 2259 and being part of tract of land conveyed to the United States of America as described in deed book 1214, page 12-14 and, being more fully described in Exhibit A attached hereto and incorporated herein.

0023296

\$.00

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

TRANSFERRED  
99 DEC 20 AM 9:18  
A. J. WAGNER  
AUDITOR

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

1.1 Excepting those soils in an area approximately 40 feet wide and 218.17 feet long, bounded on the east by the centerline of Mound Road as described above, Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block D, Mound Plant, Miamisburg, Ohio dated January, 1999) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

- (1) single or multifamily dwellings or rental units;
- (2) day care facilities;
- (3) schools or other educational facilities for children under eighteen years of age; and
- (4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

- 1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.
2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.
3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.
  - 3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.
  - 3.2 **Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.
  - 3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this 19 day of November, 1999.

UNITED STATES OF AMERICA

Susan Brechbill

WITNESSETH:

Olivia Geisler  
Linda Grester  
Lorinda LeDuc  
Lorinda LeDuc

State of Ohio )  
County of Montgomery ) SS.

Before me, a Notary Public in and for said State and County, appeared this 19 day of November, 1999, Susan Brechbill, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.



Randolph Torrey  
Notary Public  
RANDOLPH T. TORREY, Attorney-at-Law  
Notary Public, State of Ohio  
My Commission has no expiration date.  
Section 147.03 O. R. C.

This document was prepared by the U.S. Department of Energy.

**NO PLAT REQUIRED**  
(SEC 711.131 ORC)  
MIAMISBURG CITY PLANNING COMMISSION  
Jessamine J. Baker  
Secretary

DESCRIPTION OF

12.429 Acres

located in

Section 30, Fractional Town 2, Range 5 MRS

part of

City of Miamisburg Lot No. 2259

DIV 2,9

K46-5-1-11

December 09, 1999

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30, Fractional Town 2, Range 5 M.R.S. and being part of City of Miamisburg Lot No. 2259 and being part of a tract of land conveyed to The United States of America as described in Deed Book 1214, Page 12-14 and being more particularly described as follows:

**COMMENCING** at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, **THENCE** with the north line of said Section 30 and the northerly line of Fractional Township 2, Range 6 MRS, **South 84° 00'12" East for a distance of 1249.75 feet** to the Northwest corner of the Roads End Plat as recorded in Plat Book DD, Page 75 and the centerline of Mound Road extended north, (witness a 5/8" Rebar Found bearing South 63° 34'50" East at a distance of 0.30 feet from the Northwest corner of said Plat);

**THENCE** with said Centerline of Mound Road, **South 05° 32'42" West for a distance of 2490.95 to a Mag Nail Set at the TRUE POINT OF BEGINNING** of the herein described tract;

**THENCE** continuing with said centerline, **South 05° 32' 42" West for a distance of 218.17 feet to a Railroad Spike Found** by common report at the Northeast corner of a 0.78 Acre tract of land conveyed to Randall & Rita Hilgefors as described in Deed MF 97-0746-A08;

**THENCE** with said 0.78 Acre Hilgefors North line, **North 85° 28'23" West for a distance of 111.00 feet to a 5/8" Rebar Set** at said 0.78 Acre Hilgefors Northwest corner, (passing a 5/8" Rebar Set at 30.00 feet);

**THENCE** with said 0.78 Acre Hilgefors West line and the West line of a 0.26 Acre tract conveyed to Betty J. Eckhart as described in Deed MF 98-0834-C09 and the West line of a 0.7 Acre tract conveyed to Melissa A. Wilson as described in Deed MF 89-0125-D01 and the West Line of the Miami Mound Plat as recorded in Plat Book 94, Page 34, **South 07° 06'56" East for a distance of 714.44 feet to a IP in Concrete Found** at the Southwest corner of said Miami Mound Plat;

DEED

99-0852

B09

**THENCE** with the Southerly line of said City of Miamisburg Lot No. 2259, North 84° 32'54" West for a distance of 613.34 feet to a 5/8" Rebar Set;

**THENCE** on a new division line, North 05° 34'05" East for a distance of 291.47 feet to a 5/8" Rebar Set;

**THENCE** continuing on a new division line, North 84° 25' 51" West for a distance of 93.50 feet to a 5/8" Rebar Set;

**THENCE** continuing on a new division line, North 05° 34'05" East for a distance of 360.00 feet to a 5/8" Rebar Set;

**THENCE** continuing on a new division line, South 84° 26'02" East for a distance of 35.50 feet to a 5/8" Rebar Set;

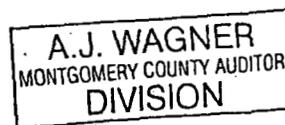
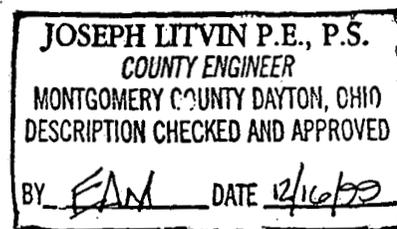
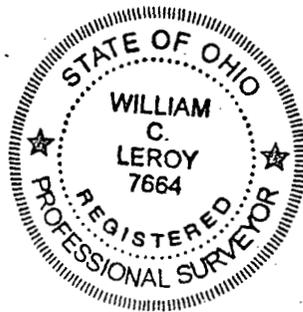
**THENCE** continuing on a new division line, North 05° 34'05" East for a distance of 131.23 feet to a 5/8" Rebar Set;

**THENCE** continuing on a new division line on a **TANGENT CURVE to the RIGHT** with a **RADIUS** of 130.00 feet, a **DELTA ANGLE** of 89° 20'20", a **ARC LENGTH** of 202.72 feet with a **CHORD BEARING** of North 50° 14'15" East for a **CHORD DISTANCE** of 182.80 feet to a 5/8" Rebar Set;

**THENCE** continuing on a new division line, South 85° 05'35" East for a distance of 496.88 feet **BACK TO THE TRUE POINT OF BEGINNING**, (passing a 5/8" Rebar set at 466.88 feet).

Described tract contains 12.429 Acres more or less. North based on State Plane Coordinates, South Zone State of Ohio as taken from a drawing prepared by Lockwood, Jones and Beals dated 6-01-82, Project No. 2149. This Description is based on an actual Field Survey performed by HLS Surveyors and Engineers under the direct supervision of William C. LeRoy P.S. Ohio License Number 7664. Subject to all Easements, Highways, Covenants and Restrictions of Public Record.

  
William C. LeRoy P.S.  
Ohio License No. 7664  
12-9-99



PARCEL D MOUND 99152PD

DEED

99-0852

B10

~~Does~~ contain  
access clause

Appendix A

Quitclaim Deed for RB D

## QUITCLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C. §2201(g) for the sum of Ten Dollars (\$10.00), the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described premises, commonly known as Parcel D:

Situate in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

Beginning at a iron spike, being the North East corner of Section 35 and the South East corner of Section 36, said point being the center of Benner Road (40 feet R/W) and being referenced North 84° 27' 09" West 3102.92 feet from spike (0.5' deep) at the intersection of the center line of Mound Road (60 feet R/W) with the centerline of said Benner Road in said City of Miamisburg, and being the point of beginning for the land herein described, thence S 84° 28' 03" E 1333.66 feet along the center line of Benner Road to a railroad spike (0.2' deep) located in the center of Benner Road, thence N 4° 44' 28" E 2010.06 feet to a concrete monument, thence N 83° 57' 37" W 34.19 feet to a concrete monument being the TRUE POINT OF BEGINNING; thence N 84° 31' 10" W 613.33 feet to a point, thence N 5° 35' 49" E 291.47 feet to a point, thence N 84° 24' 07" W 93.5 feet to a point, thence N 5° 35' 49" E 360.00 feet to a point, thence S 84° 24' 18" E 35.50 feet to a point, thence N 5° 35' 48" E 131.13 feet to a point, thence along the arc of a curve to the right having a radius of 130 feet for a distance of 203.83 feet to a point, thence S 85° 04' 40" E 495.72 feet to a point located in the center of Mound Road, thence along the centerline of Mound Road S 5° 33' 37" W 218.17 feet to an railroad spike, thence N 85° 26' 39" W 111.00 feet to and iron pipe, thence S 7° 05' 12" E 714.44 feet to the true point of beginning containing 12.43 acres more or less, and subject to all legal highways and easements of record. Prior Deed Reference: Deed Book 1214, Page 8.

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (Ohio EPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of the Ohio EPA or ODH, their successors and assigns.
  - 1.1 Excepting those soils in an area approximately 40 feet wide and 218.17 feet long, bounded on the east by the centerline of Mound Road as described above, Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block D, Mound Plant, Miamisburg, Ohio dated January, 1999) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

- (1) single or multifamily dwellings or rental units;
- (2) day care facilities;
- (3) schools or other educational facilities for children under eighteen years of age; and
- (4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the Ohio Environmental Protection Agency.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

3.2 **Description of Remedial Action Taken:** A soil removal action was performed and Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

**IN WITNESS WHEREOF**, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

UNITED STATES OF AMERICA

WITNESSETH:

\_\_\_\_\_  
\_\_\_\_\_

State of Ohio )  
County of Montgomery ) SS.

Before me, a Notary Public in and for said State and County, appeared this \_\_\_\_ day of \_\_\_\_\_, 1999, G. Leah Dever, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

SEAL \_\_\_\_\_  
\_\_\_\_\_  
Notary Public

This instrument was prepared by: Randolph T. Tormey, Attorney at Law  
PO Box 3020  
Miamisburg, OH 45343  
937.865.3025

**Appendix B**

**Legal Description of RB D**

Situate in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

Beginning at a iron spike, being the North East corner of Section 35 and the South East corner of Section 36, said point being the center of Benner Road (40 feet R/W) and being referenced North  $84^{\circ} 27' 09''$  West 3102.92 feet from spike (0.5' deep) at the intersection of the center line of Mound Road (60 feet R/W) with the centerline of said Benner Road in said City of Miamisburg, and being the point of beginning for the land herein described, thence S  $84^{\circ} 28' 03''$  E 1333.66 feet along the center line of Benner Road to a railroad spike (0.2' deep) located in the center of Benner Road, thence N  $4^{\circ} 44' 28''$  E 2010.06 feet to a concrete monument, thence N  $83^{\circ} 57' 37''$  W 34.19 feet to a concrete monument being the TRUE POINT OF BEGINNING; thence N  $84^{\circ} 31' 10''$  W 613.33 feet to a point, thence N  $5^{\circ} 35' 49''$  E 291.47 feet to a point, thence N  $84^{\circ} 24' 07''$  W 93.5 feet to a point, thence N  $5^{\circ} 35' 49''$  E 360.00 feet to a point, thence S  $84^{\circ} 24' 18''$  E 35.50 feet to a point, thence N  $5^{\circ} 35' 48''$  E 131.13 feet to a point, thence along the arc of a curve to the right having a radius of 130 feet for a distance of 203.83 feet to a point, thence S  $85^{\circ} 04' 40''$  E 495.72 feet to a point located in the center of Mound Road, thence along the centerline of Mound Road S  $5^{\circ} 33' 37''$  W 218.17 feet to an railroad spike, thence N  $85^{\circ} 26' 39''$  W 111.00 feet to and iron pipe, thence S  $7^{\circ} 05' 12''$  E 714.44 feet to the true point of beginning containing 12.43 acres more or less, and subject to all legal highways and easements of record.

## 2.10 Selected Remedy

### 2.10.1 Description

The selected remedy for RB D is institutional controls in the form of deed restrictions on future land use. The specific restrictions to be adopted are provided in the deed attached to this ROD as Appendix A. The objective of these restrictions is to:

- ▶ Ensure that industrial land use is maintained;
- ▶ Prohibit the use of bedrock ground water;
- ▶ Provide site access for federal and state agencies for the purpose of taking response actions, including sampling and monitoring; and
- ▶ Prohibit removal of RB D soils from the Mound NPL Facility boundary without approval from the Ohio Department of Health.

*This statement is not in deed*

DOE or its successors, as the lead agency for this ROD, has the responsibility to monitor, maintain and enforce these institutional controls. This responsibility includes the duty to conduct annual assessments of compliance with the deed restrictions and the duty to enforce the deed restrictions if any noncompliance is detected. The assessment and enforcement processes are outlined in Appendix C, which is intended to serve as a framework for discussion of operation and maintenance activities for the selected remedy.

Within ninety (90) days of the date this ROD is signed, DOE shall submit to USEPA and Ohio EPA for their approval a formal proposal regarding operation and maintenance of the institutional controls. This proposal and the annual compliance assessments shall be considered primary documents under the Federal Facility Agreement. If the DOE, USEPA and OEPA agree, the frequency of the compliance assessments can be changed at any time.

The soils within RB D have not been evaluated for any use other than on-site industrial use. Any off-site disposition of the RB D soil without proper handling, sampling, and management could create an unacceptable risk to off-site receptors. An objective of the preferred alternative is to prevent residential exposure to soils from RB D.

### 2.10.2 Estimated Costs

The initial costs associated with these deed restrictions are those associated with the writing and recording of the restrictions with the deed. The costs associated with monitoring and enforcing the land use and property deed restrictions are estimated to be \$5,000 per year.

**EXHIBIT "A"**  
**UTILITY EASEMENT**  
**0.0713 ACRES**

Situate in Section 30, Town 2, Range 5, M.Rs., City of Miamisburg, County of Montgomery, in the State of Ohio, being part of a 12.459 acre tract of land out of Lot 2259 of the consecutive numbered lots of the City of Miamisburg, Ohio as conveyed to the Miamisburg Mound Community Improvement by deed recorded in Microfiche No. 99-852B05 of the Deed Records of Montgomery County, Ohio and being an utility easement, said easement being more particularly described as follows:

**COMMENCING** at a found iron pin at the southwest corner of said 12.459 acre tract of land and on the south line of said Lot 2259;

thence South  $84^{\circ}32'05''$  East along the south line of said 12.459 acre tract and Lot 2259 a distance of 78.73 feet to a point;

thence North  $05^{\circ}34'54''$  East leaving the south line of said 12.459 acre tract and Lot 2259 along the west line of an existing 10 feet wide utility easement as recorded in Microfiche No. 02-077423D of the Deed Records of Montgomery County, Ohio a distance of 189.84 feet to the **TRUE POINT OF BEGINNING**;

thence North  $84^{\circ}25'06''$  West leaving the west line of said existing 10 feet wide utility easement a distance of 14.57 feet to a point;

thence North  $03^{\circ}21'22''$  East a distance of 161.61 feet to a point;

thence North  $19^{\circ}52'10''$  West a distance of 27.20 feet to a point of curvature, said point also being on the east line of an existing utility easement as recorded in Microfiche No. 99-702D09 of the Deed Records of Montgomery County, Ohio;

thence along the east line of said existing utility easement in a northwesterly direction on a curve to the left with a central angle of  $55^{\circ}22'10''$ , a radius of 75.50 feet, an arc distance of 72.96 feet, the chord of which bears North  $19^{\circ}17'34''$  West a distance of 70.15 feet to a point of reverse curvature;

thence continuing along the east line of said existing utility easement in a northwesterly direction on a curve to the right with a central angle of  $52^{\circ}34'27''$ , a radius of 15.00 feet, an arc distance of 13.76 feet, the chord of which bears North  $20^{\circ}41'26''$  West a distance of 13.29 feet to a point;

thence North  $05^{\circ}35'48''$  East continuing along the east line of said existing utility easement a distance of 22.06 feet to a point;

thence South  $19^{\circ}52'10''$  East leaving the east line of said existing utility easement a distance of 33.02 feet to a point;

thence South  $85^{\circ}28'11''$  East a distance of 59.17 feet to a point;

thence South  $04^{\circ}31'49''$  West a distance of 10.00 feet to a point;

thence North  $85^{\circ}28'11''$  West a distance of 54.64 feet to a point;

thence South  $19^{\circ}52'10''$  East a distance of 88.60 feet to a point;

thence South  $03^{\circ}21'22''$  West a distance of 139.04 feet to a point;

thence South  $84^{\circ}25'06''$  East a distance of 5.53 feet to a point, said point also being on the west line of the aforesaid existing 10 feet wide utility easement;

Utility Easement  
0.0713 Acres  
(Continued)

thence South 05°34'54" West along the west line of said existing 10 feet wide utility easement a distance of 25.00 feet to the **TRUE POINT OF BEGINNING**. Containing 0.0713 acres more or less and subject to all legal highways, easements, and agreements of record.

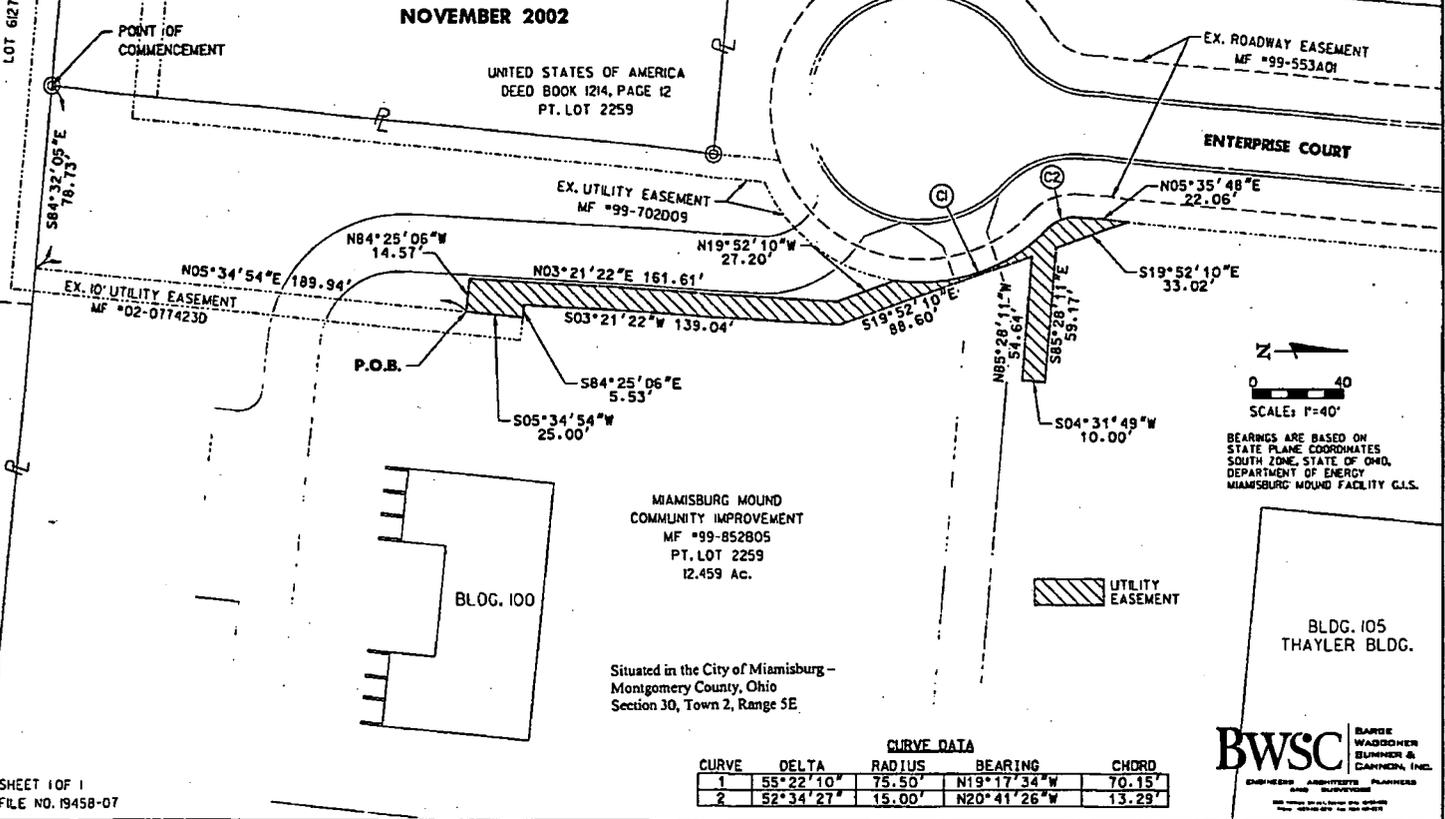
Bearings are based on State Plane Coordinates South Zone, State of Ohio, Department of Energy, Miamisburg Mound Facility G.I.S.

**Prior Deed Reference, Microfiche No. 99-852B05**

**EXHIBIT "A"**  
**UTILITY EASEMENT PLAN**  
 SECTION 30, TOWN 2, RANGE 5 M.R.s.  
 PART OF CITY LOT No. 2259  
 CITY OF MIAMISBURG  
 MONTGOMERY COUNTY, OHIO

NOVEMBER 2002

UNITED STATES OF AMERICA  
 DEED BOOK 1214, PAGE 12  
 PT. LOT 2259



N  
 0 40  
 SCALE: 1"=40'  
 BEARINGS ARE BASED ON  
 STATE PLANE COORDINATES  
 SOUTH ZONE, STATE OF OHIO,  
 DEPARTMENT OF ENERGY  
 MIAMISBURG MOUND FACILITY C.L.S.

MIAMISBURG MOUND  
 COMMUNITY IMPROVEMENT  
 MF #99-852805  
 PT. LOT 2259  
 12.459 Ac.

Situated in the City of Miamisburg -  
 Montgomery County, Ohio  
 Section 30, Town 2, Range 5E

CURVE DATA				
CURVE	DELTA	RADIUS	BEARING	CHORD
1	55°22'10"	75.50'	N19°17'34"W	70.15'
2	52°34'27"	15.00'	N20°41'26"W	13.29'

**BWSC** | BARGE  
 WAGGONER  
 BLUNNER &  
 CANNON, INC.  
 ENGINEERS ARCHITECTS PLANNERS  
 AND SURVEYORS  
 200 NORTH 10TH STREET, SUITE 200  
 COLUMBUS, OHIO 43260-1000

SHEET 1 OF 1  
 FILE NO. 19458-07

**DECLARATION OF EASEMENT**

THIS DECLARATION OF EASEMENT ("Declaration") is made on this 18<sup>th</sup> day of March, 2003, by MIAMISBURG MOUND COMMUNITY IMPROVEMENT CORPORATION, an Ohio non-profit corporation ("Declarant"), under the terms and conditions set forth below.

**RECITALS:**

A. By virtue of a Deed dated November 19, 1999, and recorded at Microfiche No. 99-852B05 of the Montgomery County, Ohio Recorder's office, The United States of America, acting by and through the Department of Energy ("DOE"), conveyed to Declarant the real property described on Exhibit A, attached hereto and incorporated herein by reference ("Declarant's Property").

B. Declarant desires to create, on the terms and conditions set forth herein, a permanent, non-exclusive easement for utility purposes, together with the right to construct, install, operate, maintain, repair, replace and/or remove any lines and all related equipment and appurtenances thereto that are necessary for the supply of gas, water, electrical power, sewage and waste disposal, drainage, telephone and communication utilities on, over and across a portion of the Declarant's Property, as identified herein.

NOW, THEREFORE, in consideration of the recitals set forth above and the terms and conditions set forth below, Declarant hereby declares as follows:

1. **PROVISIONS OF EASEMENT GRANTED** - Declarant hereby grants to utility providers, their successors and assigns, a permanent, non-exclusive easement upon, over and under the area of the Declarant's Property described in Exhibit B, attached hereto and incorporated herein (the "Easement Area"), for the purpose of constructing, installing, maintaining, operating, repairing, and/or replacing utility lines and all related equipment and appurtenances thereto that are necessary for the supply of gas, water, electrical power, sewage and waste disposal, drainage, telephone and communication utilities (such lines, equipment and appurtenances are collectively referred to as the "Equipment"). Declarant further grants to such utility providers, their successors and assigns, a permanent, non-exclusive ingress and egress easement over the Easement Area and such other portions of the Declarant's Property as reasonably necessary for the purpose of constructing, installing, maintaining, operating, repairing and/or replacing their Equipment. Notwithstanding anything to the contrary provided in this Declaration or in the exhibits attached hereto, in no event shall the grant of this easement include any area that includes or is bounded by any perimeter security fence on the Declarant's Property as it exists as of the date of this Declaration. In addition, the use of this easement shall not preclude the use by other utility providers of the area included within the Easement Area. All utility providers making use of the Easement Area shall be deemed to have agreed to be bound by the terms and conditions of this Declaration.

2. **INSTALLATION OF EQUIPMENT** - All utility providers making use of the Easement Area shall undertake, at their sole expense, the construction, installation, maintenance, operation, repair and/or replacement of their Equipment, and such work shall be accomplished in such a manner so as not to conflict with Declarant's rights or obligations, endanger Declarant's

personnel or property or the personnel or property of other occupants of the Declarant's Property, or disturb or interfere with the Equipment of other utility providers or any perimeter security fence on or around the Declarant's Property.

3. **PROTECTION OF PROPERTY** – Any and all construction, installation, repair, maintenance or other activity undertaken by or at the direction of utility providers on or to the Equipment and/or the Easement Area shall be conducted in a manner that reasonably minimizes the impact on the Declarant's Property and the Equipment of other utility providers. Utility providers shall undertake all actions reasonably necessary to restore the affected areas to the same condition as existed prior to such activities, including without limitation, sowing grass seed, covering affected areas with straw and returning affected areas to their prior levels as nearly as possible.

4. **COMPLIANCE WITH RESTRICTIONS** – All utility providers making use of the Easement Area shall have reviewed the restrictions and covenants set forth in the Deed by which DOE conveyed to Declarant the Declarant's Property prior to the construction or installation of any of their Equipment. Each utility provider agrees that, as set forth in the Deed, its use of the Easement Area is subject to the terms thereof, and further agrees to be bound to comply with the restrictions and covenants set forth therein, including without limitation, the following:

4.1 Excepting those soils in an area approximately 40 feet wide and 218.17 feet long, bounded on the east by the centerline of Mound Road as described above, Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release **Block D**, Mound Plant, Miamisburg, Ohio dated January, 1999) without prior written approval from the Ohio Department of Health (ODH), or a successor agency. Each utility provider warrants that it will make its officers, agents, contractors, employees, and others for whom it is responsible aware of the restriction on soil removal and contractually obligate agents and contractors to abide by this restriction.

4.2 Each utility provider covenants not to use, or allow the use of, the Declarant's Property for any residential or farming activities, or any other activities that could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Declarant's Property. Restricted uses shall include, but not be limited to:

- (1) single or multifamily dwellings or rental units;
- (2) day care facilities;
- (3) schools or other educational facilities for children under eighteen years of age; and
- (4) community centers, playgrounds, or other recreational religious facilities for children under eighteen years of age.

Declarant shall be contacted to resolve any questions that may arise as to whether a particular activity would be considered a restricted use.

4.3 Each utility provider covenants not to extract, consume, expose, or use in any way the groundwater underlying the Declarant's Property without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

If there is any conflict between the terms of the Deed and this Declaration, the terms of the Deed shall control.

5. ENVIRONMENT – In constructing, installing, maintaining, operating, using, repairing and/or replacing the Equipment, utility providers shall not unlawfully pollute the air, soil or water or create a public nuisance and shall use all reasonable means available to protect the environment and natural resources from damage arising from this easement or activities incident to it and, where damage nonetheless occurs, utility providers shall be liable to restore the environment and damaged natural resources. Utility providers shall promptly comply, at their sole expense, with present and future federal, state, and local laws, ordinances, regulations, or instructions controlling the quality of the environment; provided, however, that the foregoing does not affect the provider's right to contest their validity or enjoin their applicability. If a utility provider discovers contamination on Declarant's Property, it shall immediately cease all activities on the Declarant's Property and notify Declarant.

6. LAWS, ORDINANCES, REGULATIONS – All utility providers making use of the Easement Area shall comply with all applicable federal, state and local laws, statutes, ordinances, regulations, orders and directives with regard to the construction, installation, operation, maintenance, repair and replacement of the Equipment, and obtain all licenses or permits required in connection therewith. Such providers shall also comply with such rules and regulations regarding security, ingress, egress, safety, and other matters as may be prescribed from time to time by the Declarant.

7. DECLARANT'S RESERVATIONS – Declarant reserves to itself, its successors and assigns forever, the right to use the Easement Area in any manner not inconsistent with the rights granted in this Declaration, including without limitation, the right to use any portion of the Declarant's Property situated on, over and/or under the Easement Area for the construction, installation, operation, maintenance, repair and/or replacement of electric transmission lines, water lines, utility lines, sewer lines, and other facilities.

8. THIRD-PARTY RESERVATIONS – This easement is granted subject to such other rights that may be outstanding in third parties in, on, over and/or across the Easement Area, including without limitation, the rights of third parties as set forth in the Deed by which DOE conveyed to Declarant the Declarant's Property.

9. INDEMNITY – Declarant shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the construction, installation, operation, maintenance, use, repair and/or replacement of the Equipment, including without limitation, damages to the property of utility providers making use of this easement, or for damages to the property or injuries to the persons of such providers' officers, agents, servants, employees, or others who may be on the Declarant's Property at their invitation or the invitation of any one of them. All utility providers making use of the Easement Area shall indemnify and hold harmless Declarant, its successors and assigns forever, from and against any and all actions, causes of action, lawsuits, judgments or other damages or liabilities, losses, costs or expenses resulting

from or arising in connection with, either directly or indirectly, the construction, installation, maintenance, operation, use, repair, or replacement or other activity undertaken by such providers on or to their respective Equipment and/or the Easement Area.

10. **BOUNDARY OR SURVEY MONUMENTATION** – Utility providers shall not disturb, obliterate or destroy any land boundary or survey monument on the Declarant's Property without Declarant's prior written approval.

11. **PLANS AND SPECIFICATIONS** – All utility providers desiring to make use of the Easement Area shall submit plans and specifications of proposed construction and installation of Equipment to the Declarant and obtain Declarant's written approval prior to ordering of materials or commencement of construction or installation.

12. **REMOVAL/RELOCATION OF EQUIPMENT** – If all or any portion of the Easement Area shall be needed by Declarant, utility providers shall remove their respective Equipment and appurtenant improvements, upon notice to do so, to such other location(s) as mutually agreed upon by the provider and Declarant. Declarant will pay any relocation costs.

13. **UTILITY PROVIDER PERFORMANCE** – The failure of the Declarant to insist in any one or more instances upon strict performance of any of the terms, covenants, or conditions of this Declaration shall not be construed as a waiver or relinquishment of the Declarant's right to the future performance of any such terms, covenants, or conditions, and a utility provider's obligation with respect to any such future performance shall continue in full force and effect.

14. **DECLARANT'S LIMITATIONS TO GRANT** – All utility providers acknowledge and understand that this instrument is effective only insofar as the rights of the Declarant in Declarant's Property are concerned and that each provider shall obtain such permission as may be necessary on account of any other existing rights, including without limitation, the rights of third parties as set forth in the Deed by which DOE conveyed to Declarant the Declarant's Property.

15. **PROVISIONS BINDING** – The conditions of this Declaration shall extend to and be binding upon and shall inure to the heirs, representatives, successors, and assigns of the utility provider.

16. **RUNS WITH THE LAND** - The easement, restrictions and covenants contained in this Declaration shall run with the land and shall be binding upon the parties and their respective successors and assigns.

17. **AMENDMENT** - No modification or amendment hereto shall be valid unless in writing and signed by the Declarant.

IN WITNESS WHEREOF, the undersigned has executed this Declaration on behalf of Declarant as of the day and year first set forth above.

DECLARANT:

MIAMISBURG MOUND COMMUNITY  
IMPROVEMENT CORPORATION,  
an Ohio non-profit corporation

By: Michael J. Gravelman

Printed Name: Michael J. Gravelman

Title: President

STATE OF Ohio, COUNTY OF Montgomery, SS:

The foregoing instrument was acknowledged before me this 18<sup>th</sup> day of March, 2003, by Michael J. Gravelman the President of Miamisburg Mound Community Improvement Corporation, an Ohio non-profit corporation, on behalf of said corporation.

Jean Wysong  
Notary Public

Jean Wysong, Notary Public  
in and for the State of Ohio  
My Commission Expires June 28, 2004



This instrument prepared by:  
Shannon L. Costello, Esq.  
Coolidge, Wall, Womsley & Lombard Co., L.P.A.  
33 West First St., Suite 600  
Dayton, OH 45402

**Parcel H**



38  
DEED

Montgomery County  
DEED-99-141465 0008  
Joy Clark, Recorder  
\$38.00 12/21/99 07:59:38

15B.00 11/22/02 11:26:59  
DEED-02-146504 0038  
Montgomery County  
Judy Dodge Recorder

QUITCLAIM DEED

DIV/2.9

K46-5-1-10

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel H:

Situated in the State of Ohio, County of Montgomery, and in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and containing 14.29 acres, more or less, and being more fully described in Exhibit A attached hereto and incorporated herein.

0023295

\$ .00

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

TRANSFERRED  
99 DEC 20 AM 9:13  
A.J. WAGNER  
AUDITOR

~~DEED 99-0852 B11~~

Note:  
Deed is being re-recorded to add  
Exhibit B

200481  
Closed  
200407

1.1 Excepting those soils contained within an area bounded as follows:  
Commencing at an iron pin found on the southerly projection of the centerline of Mound Road, said point also being the northeast corner of a 164.13 Acre tract of land as described in Deed Book 1246, Page 45 of the Deed Records of Montgomery County and being the **TRUE POINT OF BEGINNING**, thence South 06° 38' 48" West, 100.00 feet to an iron pin found; thence South 84° 42' 56" East, 193.40 feet to an iron pin found; thence South 05° 33' 53" West, 571.98 feet to a point on the centerline of Mound Road; thence due West, 72.93 feet to a point; thence South 51° 28' 10" West, 9.97 feet to a point on the proposed westerly right-of-way of Mound Road; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 299.85 feet to a point; thence North 04° 05' 41" West, 185.03 feet to a point; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 75.76 feet to a point; thence along the proposed westerly right-of-way of Mound Road, on a curve to the right for a distance of 130.93 feet with a radius of 923.62 feet and a central angle of 08° 07' 19" and a chord distance of 130.82 feet and a chord bearing of North 02° 30' 42" West to a point; thence along the existing westerly right-of-way of Mound Road, on a non-tangent curve to the right for a distance of 6.10 feet with a radius of 360.00 feet and a central angle of 00° 58' 18" and a chord distance of 6.10 feet and a chord bearing of North 12° 20' 00" West to a point; thence South 89° 52' 28" East, 18.27 feet to the **POINT OF BEGINNING**, containing 6.604 acres more or less. Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book (1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11) of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block H, Mound Plant, Miamisburg, Ohio dated July 26, 1999 without prior written approval from ODH and OEPA, or successor agencies.

1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

- (1) single or multifamily dwellings or rental units;
- (2) day care facilities;
- (3) schools or other educational facilities for children under eighteen years of age; and
- (4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

- 1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.
2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.
3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1930, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.
  - 3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.
  - 3.2 **Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.
  - 3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.
4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this 4<sup>th</sup> day of August, 1999.

UNITED STATES OF AMERICA

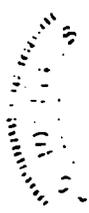
Susan R. Brechee

WITNESSETH:

[Signature]  
Otha Vincent  
[Signature]  
Frank Schmalz

State of Ohio )  
County of Montgomery ) SS.

Before me, a Notary Public in and for said State and County, appeared this 4<sup>th</sup> day of August, 1999, SUSAN R. BRECHBILL, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.



SEAL

[Signature]  
Notary Public

DERRICK J. C. FRANKLIN, Notary Public  
In and for the State of Ohio  
My Commission Expires Dec. 25, 2000

This document was prepared by the U.S. Department of Energy.

**NO PLAT REQUIRED**  
(SEC 711.131 ORC)  
MIAMISBURG CITY PLANNING COMMISSION  
[Signature]  
Secretary

DESCRIPTION OF

14.288 Acres

located in

Section 30&36, Fractional Town 2, Range 5 MRS

Section 25, Fractional Town 1, Range 6 MRS

part of

City of Miamisburg Lot No. 2259

DIV/2,9

K46-5-1-10

December 09, 1999

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30 & 36, Fractional Town 2, Range 5 M.R.S. also part of Section 25, Fractional Town 1, Range 6 MRS and being part of City of Miamisburg Lot No. 2259 and being part of a tract of land conveyed to The United States of America as described in Deed Book 1214, Page 12-14, also part of a tract of land conveyed to the United States of America as described in Deed Book 1246, Page 49 and being more particularly described as follows:

**COMMENCING** at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, **THENCE** with the west line of said Section 30, **South 05° 45' 57" West for a distance of 130.89 feet to a 1" Pinch Top Pipe Found** at the Southwest corner of a 2.90 acre tract conveyed to Robert P. Heist as described in Deed MF 74-526-C09 and at the **TRUE POINT OF BEGINNING** of the herein described tract;

**THENCE** with the south line of said 2.90 Acre Heist Lands, **South 85° 04' 57" East for a distance of 1023.91 feet to a Concrete Monument with brass disc Found** at the Southeast corner of said 2.90 Acre Heist Lands;

**THENCE** with the east line of said 2.90 Acre Heist Lands and the west right of way line of Mound Street extended, **North 06° 53' 16" East for a distance of 231.00 feet to a Concrete Monument with brass disc Found**, (passing a 5/8" Rebar Set at 100.99 feet, also passing a 5/8" Rebar Set on the North line of Section 30 at 129.56 feet);

**THENCE** leaving said right of way line, **South 84° 38' 35" East for a distance of 30.00 feet to a 5/8" Rebar Capped Found (LJB)** on the centerline of said Mound Street;

**THENCE** with the centerline of said Mound Street, **South 06° 53' 16" West for a distance of 100.00 feet to a 5/8" Rebar Capped Found (LJB)**;

**THENCE** continuing with said centerline of said Mound Street, **South 84° 38' 08" East for a distance of 193.41 feet** to the Northwest Corner of the Roads End Plat as recorded in Plat Book DD, Page 75, (witness a 5/8" Rebar Found bearing South 63° 34' 50" East at a distance of 0.30 feet from the Northwest corner of said plat);

DEED

99-0852

C03

**THENCE** continuing with said centerline of said Mound Street, **South 05° 32' 42" West for a distance of 571.99 feet to a Mag Nail Set;**

**THENCE** on a new division line, **South 89° 58' 18" West for a distance of 72.86 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line, **South 51° 26' 20" West for a distance of 48.51 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line, **South 83° 30' 22" West for a distance of 97.29 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line, **South 63° 47' 11" West for a distance of 98.67 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line, **North 89° 57' 40" West for a distance of 173.02 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line, **North 83° 51' 21" West for a distance of 247.27 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line on a **TANGENT CURVE to the RIGHT** with a **RADIUS of 360.67 feet, a DELTA ANGLE of 58° 46' 33", a ARC LENGTH of 369.99 feet with a CHORD BEARING of North 54° 28' 04" West for a CHORD DISTANCE of 353.98 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line, **North 25° 04' 47" West for a distance of 194.43 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line, **South 64° 01' 25" West for a distance of 37.94 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line, **North 64° 37' 16" West for a distance of 56.61 feet to a 5/8" Rebar Set;**

**THENCE** continuing on a new division line, **North 25° 44' 48" West for a distance of 160.76 feet to a 5/8" Rebar Set, (passing a 5/8" Rebar Set at 99.15 feet on the west line of said Section 30);**

**THENCE** continuing on a new division line through Section 36, **North 65° 31' 15" East for a distance of 35.05 feet to a 5/8" Rebar Set on the East line of said Section 36;**

**THENCE** with the East line of said Section 36, **North 05° 29' 16" East for a distance of 57.67 feet BACK TO THE TRUE POINT OF BEGINNING.**

Described tract contains 14.288 Acres more or less. North based on State Plane Coordinates, South Zone State of Ohio as taken from a drawing prepared by Lockwood, Jones and Beals dated 6-01-82, Project No. 2149. This Description is based on an actual Field Survey performed by HLS Surveyors and Engineers under the direct supervision of William C. LeRoy P.S. Ohio License Number 7664. Subject to all Easements, Highways, Covenants and Restrictions of Public Record.

Also subject to a Soil Exclusion Easement being more particularly described as follows:

**COMMENCING** at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, **THENCE** with the west line of said Section 30, **South 05° 45' 57" West for a distance of 130.89 feet to a 1" Pinch Top Pipe Found** at the Southwest corner of a 2.90 acre tract conveyed to Robert P. Heist as described in Deed MF 74-526-09;

**THENCE** with the south line of said 2.90 Acre Heist Lands, **South 85° 04' 57" East for a distance of 1023.91 feet to a Concrete Monument with brass disc Found** at the Southeast corner of said 2.90 Acre Heist Lands;

**THENCE** with the east line of said 2.90 Acre Heist Lands and the west right of way line of Mound Street extended, **North 06° 53' 16" East for a distance of 231.00 feet to a Concrete Monument with brass disc Found**, (passing a 5/8" Rebar Set at 100.99 feet, also passing a 5/8" Rebar Set on the North line of Section 30 at 129.56 feet) and the **TRUE POINT OF BEGINNING** of the herein described tract;

**THENCE** leaving said right of way line, **South 84° 38' 35" East for a distance of 30.00 feet to a 5/8" Rebar Capped Found (LJB)** on the centerline of said Mound Street;

**THENCE** with the centerline of said Mound Street, **South 06° 53' 16" West for a distance of 100.00 feet to a 5/8" Rebar Capped Found (LJB)**;

**THENCE** continuing with said centerline of said Mound Street, **South 84° 38' 08" East for a distance of 193.41 feet** to the Northwest Corner of the Roads End Plat as recorded in Plat Book DD, Page 75, (witness a 5/8" Rebar Found bearing South 63° 34' 50" East at a distance of 0.30 feet from the Northwest corner of said plat);

**THENCE** continuing with said centerline of said Mound Street, **South 05° 32' 42" West for a distance of 571.99 feet to a Mag Nail Set**;

**THENCE** with a new division line, **South 89° 58' 18" West for a distance of 72.86 feet to a 5/8" Rebar Set**;

**THENCE North 06° 48'23" West for a distance of 694.41 feet BACK TO THE TRUE POINT OF BEGINNING.**

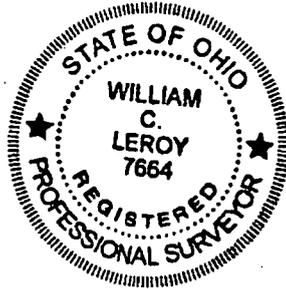
Said Easement contains 1.840 Acres more or less.



William C. LeRoy P.S.  
Ohio License No. 7664

12-9-99

RECORDED  
185331  
12-9-99



JOSEPH LITVIN P.E., P.S.  
COUNTY ENGINEER  
MONTGOMERY COUNTY DAYTON, OHIO  
DESCRIPTION CHECKED AND APPROVED  
BY EDM DATE 12/16/99

A.J. WAGNER  
MONTGOMERY COUNTY AUDITOR  
DIVISION

PARCEL H MOUND 99152ph.dwg

**Exhibit B**

**CERCLA 120(h) SUMMARY  
NOTICE OF HAZARDOUS SUBSTANCES  
Release Block H,  
Mound Plant, Miamisburg, Ohio**



**July, 1999**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

JUL 26 1999

REPLY TO THE ATTENTION OF:

SRF-6J

Mr. Richard B. Provencher  
Director  
U.S. Department of Energy  
Miamisburg Environmental Management Project  
P.O. Box 3020  
Miamisburg, OH 45343-3020

RE: U.S. DOE Mound Plant  
Release Block H  
Request for Concurrence to Transfer

Dear Mr. Provencher:

Thank you for your letter dated July 22, 1999, requesting concurrence to transfer Release Block H at the United States Department of Energy (U.S. DOE) Mound Plant in Miamisburg, Ohio.

The United States Environmental Protection Agency (US EPA) has reviewed the *Record of Decision for Release Block H, Mound Plant, Miamisburg, Ohio, Final, July 1999*, which has now been signed by U.S. DOE, U.S. EPA, and the Ohio Environmental Protection Agency, and the *Environmental Summary - Notice of Hazardous Substances for Release Block H, Mound Plant, Miamisburg, Ohio, Final, July 1999*. Based upon this information, U.S. EPA concurs that all remedial action necessary to protect public health and the environment with respect to any substance remaining in Release Block H has been taken, and that transfer of Release Block H may take place.

It is understood that any additional remedial action found to be necessary in the future shall be conducted by U.S. DOE to the extent necessary to protect human health and the environment.

The U.S. EPA fully supports redevelopment and reuse of the structures and other property available at the Mound Plant. However, assurances must be provided that all property and building leases and transfers will be protective of public health and the environment. If you have any questions or concerns about this or future economic development issues at the site, please contact Timothy Fischer, of my staff, at (312) 886-5787.

Sincerely yours,



William E. Muno, Director  
Superfund Division  
U.S. EPA, Region 5

cc: Ken Tindall, SRF-5J  
Tim Thurlow, ORC  
Graham Mitchell, Ohio EPA  
Brian Nickel, Ohio EPA  
Ruth Vandegrift, ODH  
Art Kleinrath, US DOE-MEMP  
Frank Schmalz, US DOE-MEMP

## Table Of Contents

I.	PROPERTY DESCRIPTION .....	3
II.	DESCRIPTION OF PROPERTY SUITABLE FOR TRANSFER .....	3
	A. Description of Property Suitable for Transfer .....	3
	B. Regional Context of Mound Plant and Transferred Property .....	4
	C. Historical Uses of Release Block H .....	4
III.	ENVIRONMENTAL FINDINGS .....	5
	A. Methodology .....	5
	B. Results Summary .....	8
	1. Results of Building Data Analysis .....	8
	a. Asbestos .....	8
	b. Lead .....	9
	c. Radon .....	9
	d. Radiological Surveys .....	9
	e. Polychlorinated Biphenyls .....	9
	2. Results of Potential Release Site Soil Data Analysis .....	9
	C. Summary of All Soil and Groundwater Contaminants Detected .....	11
	D. Other Factors Considered .....	19
	1. Drinking Water .....	19
	2. Monitoring Equipment .....	19
	3. Floodplain .....	19
IV.	FINDINGS OF SUITABILITY TO TRANSFER .....	24
V.	ENVIRONMENTAL COVENANTS .....	25
VI.	NOTIFICATION/PUBLIC PARTICIPATION .....	25

## ACRONYMS

AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirement
BDP	Building Data Package
BVA	Buried Valley Aquifer
BWO	Babcock and Wilcox of Ohio
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
COC	Contaminant of Concern
FFA	Federal Facilities Agreement
FOD	Frequency of Detection
GV	Guideline Value
HI	Hazard Index
IDM	Investigative Derived Material
MEMP	Miamisburg Environmental Management Project
MMCIC	Miamisburg Mound Community Improvement Corporation
NCP	National Contingency Plan
NFA	No Further Assessment
NPL	National Priorities List
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
OU	Operable Unit
pCi	picocurie
PAH	Polynuclear aromatic hydrocarbon
PETREX	(trade name for a type of soil sampling)
PRS	Potential Release Site
RB	Release Block
RD/RA	Remedial Design/Remedial Action
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision

## ACRONYMS (continued)

RRE	Residual Risk Evaluation
RREM	Residual Risk Evaluation Methodology
SM/PP	Special Metallurgical/Plutonium Processing
SOF	Statement of Finding
TPR	Technical Position Report in Support of Release Block H Residual Risk Evaluation
US DOE	United States Department of Energy
US EPA	United States Environmental Protection Agency
UTL	Upper Tolerance Limit

**CERCLA 120(h) SUMMARY  
FINDING OF SUITABILITY TO TRANSFER  
RELEASE BLOCK H  
MOUND PLANT, MIAMISBURG, OHIO**

**I. PURPOSE**

The information contained in this notice is required under the authority of regulations promulgated under section 120 (h) of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). This summary is intended to support a transfer by deed to new ownership for economic development by documenting that the U.S. Department of Energy's (US DOE) Mound Plant has met the requirements of CERCLA 120 (h) for Release Block H (RB H). A copy shall be provided to all future owners.

**II. PROPERTY DESCRIPTION**

**A. Description of Property Suitable for Transfer**

Situated in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, and Section 36, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2258 and 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

Beginning at a concrete monument, being the North East corner of Section 36 and the North West corner of Section 30, and being the point of beginning for the land herein described, thence S 5° 47' 45" W 130.89 feet to an iron pin being the TRUE POINT OF BEGINNING; thence S 85° 03' 12" E 1023.90 feet to a concrete monument, thence N 6° 54' 59" E 231.00 feet to a concrete monument, thence S 84° 36' 50" E 30.00 feet to a iron pin, thence S 6° 54' 54" W 100.00 feet to a iron pin, thence S 84° 36' 37" E 193.40 feet to a concrete monument, thence S 5° 34' 19" W 571.986 feet along the center line of Mound Road to a point, thence S 90° 0' 0" W 72.86 feet to a point, thence S 51° 28' 1.6" W 48.51 feet to a point, thence S 83° 32' 4" W 97.29 feet

to a point, thence S 63° 48' 53" W 98.67 feet to a point, thence N 89° 55' 58" W 173.02 feet to a point, thence N 83° 49' 39" W 244.21 feet to a point, thence along the arc of a curve to the right having a radius of 360.67 feet for a distance of 353.12 feet to a point, thence N 25° 03' 02" W 214.48 feet to a point, thence S 64° 03' 10" W 37.94 feet to a point, thence N 64° 35' 31" W 56.61 feet to a point, thence N 25° 43' 03" 160.76 feet to a point, thence N 65° 33' 00" E 35.05 feet to a point, thence N 5° 31' 01" E 57.67 feet to a iron pin being the true point of beginning containing 14.29 acres more or less, and subject to all legal highways and easements of record.

**B. Regional Context of Mound Plant and Transferred Property**

The Mound Plant occupies an approximately 306 acre site in Montgomery County within the City of Miamisburg, Ohio. The northern boundary of the plant is approximately 0.13 miles south of Mound Avenue in Miamisburg. Benner Road forms the southern boundary of the plant, and the Conrail Railroad roughly parallels the western boundary at a distance of 50-200 feet. The Mound Plant consists of the Operational Area and the New Property (also referred to as the South Property). Approximately 130 buildings with a total of 1.4 million square feet of floor space existed at one time at the Mound Plant (although the number of buildings is constantly diminishing as buildings are decommissioned and demolished); all of which were located in the Operational Area.

**C. Historical Uses of Release Block H**

The primary use of most of the area making up Block H, has been as a parking area for Mound employee vehicles. Occasional uses have included recent use as a staging area for empty trailers and staging for dismantled modular office structures. Release Block H, through the early 1950's, included office structures that housed the construction related crews involved in construction of the plant. No other uses of the area of the Mound facility referred to as Release Block H are known.

### III. ENVIRONMENTAL FINDINGS

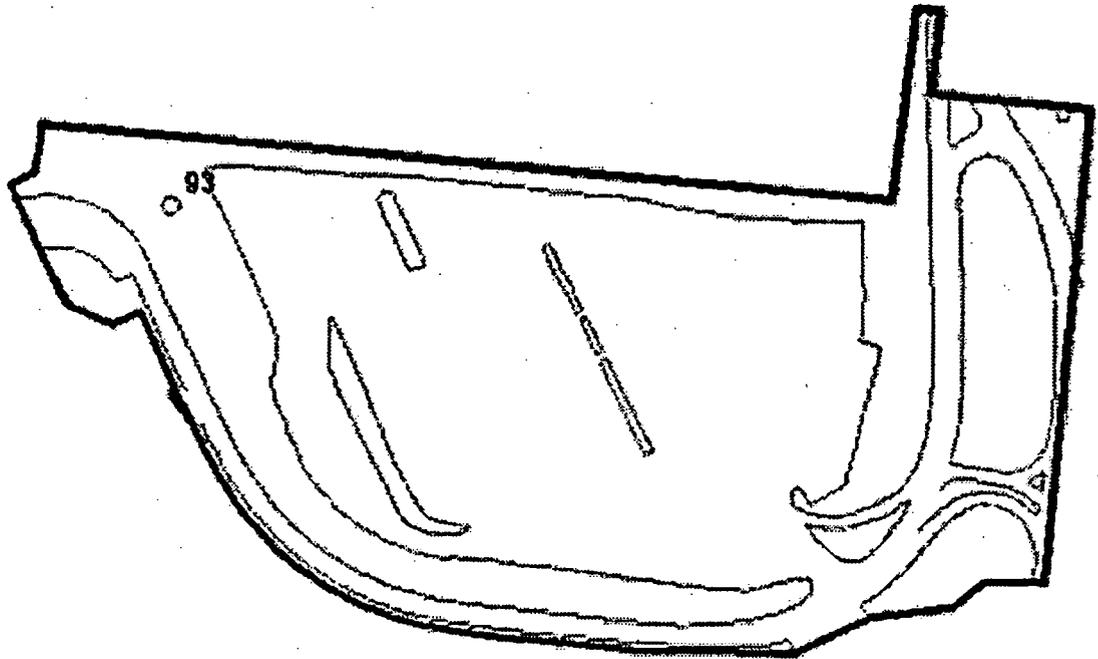
#### A. Methodology

In accordance with Section 120 (h)(3) of CERCLA, to the extent that information is available based on a complete search of DOE files, the following shall be placed in deeds: (1) a notice of the type and quantity of hazardous substances stored, disposed of, or released; (2) a notice of the time at which such storage, disposal, or release took place; and (3) a description of any remedial action taken. Information sources reviewed to obtain the information include:

- ▶ Federal Government records
- ▶ Recorded chain of title documents
- ▶ Reasonably obtainable aerial photographs
- ▶ Visual inspection of the property and adjacent properties
- ▶ Reasonably obtainable records of releases on adjacent properties
- ▶ Interviews with current or former employees
- ▶ Sampling, if appropriate under the circumstances.

RB H includes one Potential Release Site or PRS that has undergone previous investigations. This PRS was identified on the basis of potential radiological and chemical (non-radioactive) contamination using knowledge of historical land use or on actual measurements of contaminants. Before transfer of a release block can be completed, all buildings and PRSs must be evaluated for protectiveness or remediated to be protective. Any residual risks associated with remaining contamination in RB H have been evaluated.

**FIGURE 3-1 PRS Within Release Block H**



A Core Team with representatives from the US DOE, US Environmental Protection Agency (US EPA), and Ohio EPA (OEPA) performs a joint agency evaluation of each of the potential contamination problems and recommends the appropriate response. The Core Team uses process knowledge, site visits, and existing data to determine whether or not any action is warranted concerning the possible problem area.

This summary is a result of a thorough analysis of information contained in the following reference documents:

1. The Potential Release Site (PRS) Data Package for the PRS located within Release Block H. The location of the PRS in RB H is shown on Figure 3-1. The rationale for designation of this PRS is outlined in Table 3-1.

This PRS was identified on the basis of potential radiological and chemical (non-radioactive) contamination using knowledge of historical land use or on actual measurements of contaminants.

**TABLE 3-1 Release Block H PRSs/Buildings and Conclusions**

PRS	TITLE	DATE
93	Main Hill Seep Number 0603 - radiological/non-radiological.	Recommendation for NFA with continued monitoring signed by Core Team on 03/04/96.

2. Residual Risk Evaluation, Release Block H, Final, August 7 1997. *Provides the evaluation of human health risks associated with any residual contamination that may remain in the block after all remedies within a parcel have been completed. The evaluation ensures that future users of the land will not be exposed to contamination levels that would pose unacceptable health risks. This document should be used in conjunction with item 4.*
3. Proposed Plan for Release Block H, Mound Plant, Miamisburg, Ohio, Public Review Draft, Revision 0, May, 1999. *Identifies the preferred option for addressing the contamination at the Mound Site, Release Block H, to the public by briefly summarizing the*

*alternatives studied and highlighting the key factors that led to identifying the preferred alternative.*

4. **Technical Position Report In Support of the Release Block H Residual Risk Evaluation, Final, Revision 0, July, 1999.** *This report is a review of key risk data for soil and groundwater related pathways. This document should be used in conjunction with Item 2.*
5. **Record of Decision (ROD) for Release Block H, Mound Plant, Miamisburg, Ohio, Final, July, 1999.** *Documents the remedial action plan for a site and serves the following three functions: (1) certifies the remedy selection process was carried out in accordance with CERCLA, (2) describes the technical parameters of the remedy, specifying the treatment, engineering, and institutional components as well as clean up levels, and (3) provides the public with a consolidated summary of information about the site and the chosen remedy, including the rationale behind the selection.*

## **B. Results Summary**

### **1. Results of Building Data Analysis**

There are no DOE owned buildings within this release block. Consequently, there is no building related contamination warranting remedial action or environmental concern. Lease or sale of RB H for commercial/industrial use is protective of human health and the environment.

#### **a. Asbestos**

Asbestos material in buildings can be found in five forms: sprayed or troweled on ceilings and walls (surfacing materials); insulation around pipes, ducts, boilers and tanks (pipe and boiler insulation); transite (in ground piping); and in roofing materials (roofing felts); other products such as ceiling and floor tiles and wall boards (miscellaneous materials).

There are no DOE owned structures within Release Block

H, therefore, there are no areas requiring repair prior to transfer.

**b. Lead Paint**

Lead based paint was used almost exclusively in the U.S. prior to the 1970's. Congress established maximum lead concentrations in residential paint in 1978.

There are no DOE owned structures within Release Block H, therefore, there are no areas requiring repair prior to transfer.

**c. Radon**

Radon studies are presented in a 1989-90 Mound Indoor Radon study for buildings. There are no DOE owned structures within Release Block H, therefore, there are no areas requiring abatement prior to transfer.

**d. Radiological Surveys**

There were no radiological processes performed in the Release Block H Area.

**e. Polychlorinated Biphenyls**

There are no areas within Release Block H requiring Polychlorinated Biphenyls (PCB) cleanup.

**2. Results of Potential Release Site Soil Data Analysis**

The US DOE, US EPA and OEPA have jointly decided that no additional remedial action for PRS 93 is necessary with the placement of Institutional Controls in the form of deed restrictions on future land use for RB H upon transfer. Monitoring of PRS 93 groundwater seep will continue.

Risks are quantified for both carcinogenic and non-carcinogenic contaminants. The risk associated with the intake of a known or suspected carcinogen is reported in terms of the incremental

lifetime cancer risk presented by that contaminant of concern (COC), as estimated using the appropriate slope factor and the amount of material ingested. Residual levels of contamination that remain on RB H for carcinogens indicate a probability or likelihood of one chance in 10,000 to one chance in 1,000,000 of an individual developing cancer based on an industrial use scenario. This probability or likelihood is consistent with the US EPA target risk range.

Potential human health hazards from exposure to non-carcinogenic contaminants are evaluated by using a Hazard Quotient (HQ). The HQ is the ratio of the intake of a COC to a reference dose or concentration for the COC that is believed to represent a no-observable effect level. The COC-specific HQs are then summed to provide an overall Hazard Index (HI). US EPA guidance sets a limit of 1.0 for the Comprehensive HI. The HIs for the future groundwater scenarios, however, are near or above the 1.0-limit. This is based on the bedrock groundwater contaminants flowing directly to the BVA that supplies drinking water for the plant. As a result, the selected remedy prohibits the use of bedrock groundwater. This institutional control, in the form of a deed restriction, will ensure that the residual risks associated with RB H remain acceptable.

Evaluation of residual contaminants within RB H have resulted in a determination that future users of the land will not be exposed to contaminant levels that would pose unacceptable risks as long as compliance with the deed restrictions described in the RB H Record of Decision are maintained. Remediation activities and additional assessment activities are nearing completion for adjacent property to the west. Remediation activities and additional assessment activities are scheduled in the future for adjacent properties to the south. Each removal action will be designed with containment methods to prevent migration via air pathways, surface-water pathways and groundwater pathways. Stormwater management and sediment erosion control will be outlined in each of the decontamination and/or demolition project work plans. DOE believes that no additional contamination of RB H is likely from adjacent activities.

A brief summary of the history of PRS 93 and its measurements follows. For a more detailed description of PRS 93, refer to the

PRS data package as identified in Section III.A.1 of this report:

PRSs at Mound were identified based on either knowledge of historical land use that was considered potentially detrimental, or an actual sampling result showing elevated concentrations of contaminants. The location of PRS 93 is shown in Figure 3.1.

The rationale for designation of PRS 93 is outlined as follows:

Potential Release Site (PRS) 93 was historically identified as seep 603 and is located on-site, adjacent to the large parking lot. The investigation for seeps on the Main Hill was initiated in the spring of 1986. The investigation stemmed from the discovery of a groundwater seep on the western hillside below SW Building. Water from the seep was sampled and a laboratory analysis showed elevated tritium detected at low concentrations, i.e., in the range of 1,000 to 3,000 pCi/L. Flow was intermittent in the past and continues to be even recently. The latest data seem to indicate an increase in tritium concentrations but is most likely related to much diminished flow.

Soil was sampled at seep 603 as part of OU9, Regional Soils Investigation (OU9 Regional Soils Investigation Report, Rev 2, August, 1995). All radionuclide concentrations for seep 603 were at background. All other contaminants at seep 603 were in the range of background. Radiological Site Survey data from the vicinity of seep 603 shows a maximum concentration of Pu-238 of 3.46 pCi/g, which is less than Mound's ALARA guideline of 25 pCi/g. Thorium concentrations were all below the detection limit of 2 pCi/g.

### **C. Summary of All Soil and Groundwater Contaminants Detected**

The COCs for RB H were identified by reviewing all of the sampling data for the release block. Based on that review, contaminants were eliminated for further evaluation based on criteria established in the Residual Risk Evaluation Methodology (RREM) (Residual Risk Evaluation Methodology, 1/6/97, Final, Rev 0). Specifically, only contaminants exceeding (1) background, (2) a base level of potential health concern, and (3) certain frequency of detection (FOD) criteria were carried through the Residual Risk Evaluation (RRE) (Residual Risk Evaluation - Release

Block H, Final, Rev 0, August, 1997 and Technical Position Report In Support of the Release Block H Residual Risk Evaluation, Final, Rev 0, July, 1999). The COCs established for RB H are listed in Tables 3-2, 3-3, and 3-4.

Exposures to the specific concentrations of COCs were evaluated assuming intake rates for soil and groundwater. Once the intakes were estimated, the human health implications of those intakes were evaluated by reviewing toxicological data for the COCs. For the special case of groundwater, the possible exposures to current and future COCs are evaluated. This approach ensures that the cumulative and long-term impacts of the COCs are adequately characterized. The risks to a theoretical site worker and to a theoretical site construction worker in RB H are listed in Table 3-5. Pursuant to the RREM, the risks were quantified for both carcinogenic and non-carcinogenic contaminants. The risks to a theoretical site worker and to a theoretical site construction worker in RB H are listed in Table 3-5. The overall risk values are in the acceptable range of  $10^{-4}$  to  $10^{-6}$ . The HIs for the future groundwater scenarios, however, are near or above the 1.0-limit. This is based on the bedrock groundwater contaminants flowing directly to the BVA that supplies drinking water for the plant. As a result, the selected remedy prohibits the use of bedrock groundwater. This institutional control, in the form of a deed restriction, will ensure that the residual risks associated with RB H remain acceptable.

Because the scope of the RRE was limited to industrial use, the soils within RB H have not been evaluated for unrestricted release (e.g., residential use). Disposition of RB H soils without proper handling, sampling and management could create an unacceptable risk to human health and the environment.

**Table 3-2. Soil Contaminants of Concern for RB H**

Soil Constituent	CAS Numbers	Maximum Concentration Any Depth	Maximum concentration Shallow (<2' deep)	Screening Concentration (either Bkgd or G.V.) <sup>1</sup>
<b>ORGANICS (mg/kg)</b>				
Acenaphtene	83329	0.18	0.18	
Acenaphthylene	208968	0.7	0.7	
Aldrin	309002	0.0031	0.0031	
Benzo(a)pyrene	50328	1.115	1.115	0.41 <sup>2</sup>
Benzo(g,h,i) perylene	191242	1.0625	1.0625	
delta-BHC	319868	0.00025	0.00025	
Carbazole	N/A	0.5875	0.5875	
alpha Chlordane	57749	0.01	0.01	
gamma Chlordane	57749	0.0074	0.0074	
4-chloro-3-methyl phenol	59507	0.047	0.047	
Dibenzo(a,h)anthracene	53703	0.78	0.78	0.41 <sup>2</sup>
Dibenzofuran	132-64-9	1.035	1.035	
Fluorene	86737	1.45	1.45	
Heptachlor epoxide	1024573	0.0022	0.0022	
2-Methylnaphthalene	91576	0.92	0.92	
Naphthalene	91203	2.625	2.625	
Phenanthrene	3.75	3.75	3.75	

Soil Constituent	CAS Numbers	Maximum Concentration Any Depth	Maximum concentration Shallow (<2' deep)	Screening Concentration (either Bkgd. or G.V.) <sup>1</sup>
1,1,2-Trichloro-1,2,2-trifluoroethane	N/A	0.002	0.002	
<b>INORGANICS (mg/kg)</b>				
Arsenic (total)	7440382	10.9	10.9	8.6 <sup>3</sup>
Bismuth	7440-69-9	58.6	58.6	
Copper (total)	7440508	26.4	22.1	26 <sup>3</sup>
Lead (total)	7439921	163	163	48 <sup>3</sup>
Lithium	7439-69-9	40.2	19	26 <sup>3</sup>
<b>RADIONUCLIDES (pCi/g)</b>				
Cesium-137	N/A	1.9	1.9	0.42 <sup>4</sup>
Plutonium-238	N/A	56	56	0.13 <sup>3</sup>
Plutonium-242	N/A	0.0143	0.0143	
Potassium-40	N/A	45.4	21	37 <sup>3</sup>
Radium-226	N/A	3.15	3.15	0.13 <sup>4</sup>

Note: Blanks indicate background or Guideline Value not available. The more restrictive GV was used to determine which contaminants were carried through the RRE.

<sup>1</sup> - Guideline values (GVs) are decision-making tools for the Core Team. GV's help the Core Team determine if contaminants are present at levels that warrant evaluation.

<sup>2</sup> - GV corresponds to a total risk of 10<sup>-6</sup> for the ingestion pathway.

<sup>3</sup> - Background Value. When adequate numbers of measurements are available, background values are based on the 95% upper tolerance limit.

<sup>4</sup> - GV corresponds to a total risk 10<sup>-6</sup> for the ingestion, inhalation and external pathways.

Reference: "Technical Position Report In Support of the Release Block H Residual Risk Evaluation", Public Review Draft Rev 2, April, 1999.

**Table 3-3. Current Mound Plant Groundwater Contaminants of Concern Based on the Plant Water Supply**

Groundwater Constituent	Maximum concentration	Screening Concentration (either background or G.V.) <sup>1</sup>
<b>ORGANICS (mg/L)</b>		
1,1-Dichloroethene	0.0017	—
1,1,1-Trichloroethane	0.0018	0.0007 <sup>4</sup>
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	—
<b>INORGANICS (mg/L)</b>		
Cadmium	0.0077	0.051 <sup>2</sup>
Copper	0.593	0.0012 <sup>4</sup>
Lead	0.040	0.0101 <sup>4</sup>
<b>RADIONUCLIDES (pCi/L)</b>		
Actinium-227	0.335	0.26 <sup>3</sup>
Bismuth-210	0.39	—
Plutonium-239/240	2.0	0.125 <sup>4</sup>
Thorium-228	2.17	0.69 <sup>3</sup>
Tritium	7200	1485 <sup>4</sup>
Uranium-234	8.14	0.792 <sup>4</sup>
Uranium-238	8.25	0.688 <sup>4</sup>

- <sup>1</sup> - Guideline values (GVs) are decision-making tools for the Core Team. GV help the Core Team determine if contaminants are present at levels that warrant evaluation.
- <sup>2</sup> - Hazard Quotient for ingestion, dermal and inhalation. Decision made on 0.1xGV.
- <sup>3</sup> - GV corresponds to a total risk of 10<sup>-6</sup> for ingestion only.
- <sup>4</sup> - Background value. When adequate numbers of measurements are available, background values are based on the 95th% upper tolerance limit.

**Table 3-4. Future Mound Plant Groundwater Contaminants of Concern**

Groundwater Constituent	Estimated Maximum concentration	Screening Concentration (either background or G.V.) <sup>1</sup>
<b>ORGANICS (mg/L)</b>		
1,1-Dichloroethene	0.0017	---
1,1,1-Trichloroethane	0.0065	0.0007 <sup>4</sup>
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	---
<b>INORGANICS (mg/L)</b>		
Beryllium	0.0001	0.000066 <sup>5</sup>
Bismuth	0.0016	---
Cadmium	0.0077	0.051 <sup>2</sup>
Chromium	0.4961	0.0061 <sup>4</sup>
Cobalt	0.0039	---
Copper	0.5964	0.0012 <sup>4</sup>
Lead	0.040	0.010 <sup>4</sup>
Molybdenum	0.0096	0.0056 <sup>4</sup>
<b>RADIONUCLIDES (pCi/L)</b>		
Actinium-227	0.355	0.26 <sup>3</sup>
Bismuth-210	0.39	---
Plutonium-239/240	2.02	0.125 <sup>4</sup>
Thorium-228	2.17	0.69 <sup>3</sup>
Tritium	10427	1485 <sup>4</sup>
Uranium-234	8.14	0.792 <sup>4</sup>
Uranium-238	8.25	0.688 <sup>4</sup>

- <sup>1</sup> - Guideline values (GVs) are decision-making tools for the Core Team. GV's help the Core Team determine if contaminants are present at levels that warrant evaluation.
- <sup>2</sup> - Hazard Quotient for ingestion, dermal and inhalation. Decision made on 0.1xGV.
- <sup>3</sup> - GV corresponds to a total risk of 10<sup>-6</sup> for ingestion only.
- <sup>4</sup> - Background value. When adequate numbers of measurements are available, background values are based on the 95th% upper tolerance limit.
- <sup>5</sup> - Total Risk 10<sup>-6</sup> for ingestion, dermal and inhalation

Reference: "Technical Position Report in Support of the Release Block H Residual Risk Evaluation", Public Review Draft Rev 2, April, 1999.

**Table 3-5. Current and Future Residual Risks for Release Block H**

Construction Worker							
	Soil	Air	Groundwater Current	Groundwater Future	Sum of Soil, Air and Groundwater Current	Sum of Soil, Air and Groundwater Future	
Non-carcinogenic Hazard Index for Organics & Inorganics	4.0E-02	N/A	3.7E-02	1.6E+00	HI = 7.7E-02	HI = 1.7E+00	
Carcinogenic Risks for Organics & Inorganics	4.7E-06	N/A	N/A	N/A	Risk = 4.7E-06	Risk = 4.7E-06	
Carcinogenic Risks for Radionuclides	1.7E-05	2.0E-07	2.5E-06	2.9E-06	Risk = 2.0E-05	Risk = 2.3E-05	
Construction Worker							
					Overall HI =	7.7E-02	1.7E+00
					Overall Risk =	2.5E-05	2.8E-05

Site Employee						
	Soil	Air	Groundwater Current	Groundwater Future	Sum of Soil, Air and Groundwater Current	Sum of Soil, Air and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	4.0E-03	N/A	3.7E-02	1.6E+00	HI = 4.1E-02	HI = 1.6E+00
Carcinogenic Risks for Organics & Inorganics	2.0E-06	N/A	N/A	N/A	Risk = 2.0E-06	Risk = 2.0E-06
Carcinogenic Risks for Radionuclides	1.8E-05	9.9E-07	1.3E-05	1.4E-05	Risk = 3.2E-05	Risk = 4.6E-05
Site Employee						
Overall HI =					4.1E-02	1.6E+00
Overall Risk =					3.4E-05	4.8E-05

## **D. Other Factors Considered**

DOE developed a generic checklist of the issues to be considered in evaluating property to be transferred. The list was modified from those used by the Department of Defense in releasing property for sale. The list includes environmental problems from Mound Plant that are likely to concern a potential purchaser as well as items relating to the operational concerns from ongoing and future remedial actions. Table 3.6 contains a brief summary and references for all factors considered. Results of only those factors which affect RB H are presented as follows:

### **1. Drinking Water**

Mound Plant has exceeded the action levels for lead and copper due to the corrosiveness of the water distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead are available to all Mound drinking water users.

### **2. Monitoring Equipment**

An easement will be executed between the US DOE and MMCIC prior to transfer of RB H to maintain access for continued monitoring and maintenance on one air monitoring station (Air Station 212) and at Seep 603 (PRS 93). Questions regarding terms and conditions should be directed to the DOE Realty Officer, Ohio Field Office. Ohio EPA will have access for continued monitoring and maintenance of its air monitors and Seep 603.

### **3. Floodplain**

A small portion of the northeast corner of RB H lies within the 100-year floodplain, i.e., the area is subject to a 1% chance per year of inundation from a tributary of the Great Miami River. In accordance with 10 CFR 1022.5(d), DOE has identified those

uses that are restricted under Federal, state, and local floodplain regulations. Via this environmental summary, DOE is fulfilling its obligation to inform future owners of the applicability of those regulations to RB H.

The restrictions are listed in the Floodplain Assessment for the Transfer of Parcel H, December 21, 1998. A Notice of Floodplain Involvement was published in the Federal Register on January 12, 1999 (Volume 64, Number 7, pp. 1797 - 1798). The Statement of Findings (SOF) for the proposed action appeared in the Federal Register on April 26, 1999. The SOF indicated that the transfer of RB H conforms to floodplain protection standards in so much as any future land owner will be subject to the applicable codes governing development activities on property that lies within a floodplain.

TABLE 3.8 Summary of Other Factors Considered for Release Block D, Mound Plant

FACTOR CONSIDERED	AFFECTS RB H7 YES	AFFECTS RB H7 NO	RECOMMENDATION/CONCLUSION	REFERENCE
Cultural Resources	✓		There are no historic or cultural resources within RB H. None of the areas within this Release Block would fall under a Memorandum of Agreement (MOA) or require deed restrictions to be put in place prior to transfer to limit alterations to the structures.	Correspondence From Mark J. Epstein, Department Head, Resource Protection and Review, Ohio Historic Preservation Office dated July 31, 1998.
Drinking Water Quality	✓		Mound Plant has exceeded the action levels for lead and copper due to the corrosiveness of the water distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead will be made available to all Mound drinking water users.	Miamisburg Environmental Management Project, Annual Site Environmental Report for Calendar Year 1997, September 1998.
Endangered Species	✓		Two state protected species were found, the dark-eyed junco ( <i>Junco hyemalis</i> ) and the inland rush ( <i>Juncus interior</i> ). Because only one individual inland rush was located, it is not considered a viable breeding population at the Mound facility. The dark-eyed junco is not known to breed in southwestern Ohio. It has also been determined that the plant site is in the habitat range of the federally endangered species of Indiana Bat ( <i>Myotis sodalis</i> ), however, the Mound site does not provide a suitable habitat for the Indiana Bat. Neither the solitary sitings of the rush and the junco, nor the potential habitat for the Indiana bat, are expected to affect ongoing or future activities at the site.	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994.
Fragment Arcs	✓		No fragment arcs and clearance zones due to explosive hazards at onsite operations exist in Release Block H.	Drawing FSD 970058, "Clearance Zones and Fragment Arcs" Building 100 Technical Review, Appendix 7.3 - Lease Agreement for Building (Extract)

FACTOR CONSIDERED	AFFECTS RB YES	AFFECTS RB NO	RECOMMENDATION/CONCLUSION	REFERENCE
Monitoring Equipment	✓		An easement has been executed between the US DOE and MMCIC to maintain access for continued monitoring of air sampling station 212 and at seep 603 (PRS 93).	Groundwater Monitoring Program and Groundwater Protection Management Program Plan, April 1997, Revision 1.
National Environmental Policy Act (NEPA)	✓		A Finding of No Significant Impact (FONSI) was issued on October 27, 1994 for the commercialization of the Mound Plant.	Mound Plant Environmental Monitoring Plan dated July 1997. The Mound Plant EA for Commercialization of the Mound Plant, DOE/EA-1001 dated October, 1994 and FONSI for the Commercialization of the Mound Plant EA dated October 27, 1994.
Resource Conservation and Recovery Act (RCRA)		✓	DOE has found no RCRA regulated units within Release Block H warranting a RCRA closure action.  It has been determined that the closest facility boundary from Buildings 23 and 72 will not change with the sale of Release Block H. Therefore, the risk assessment information in the RCRA Part B Permit will not change.	RCRA Part B Permit Application, Volume I, Section A, September 1995 (as amended) Responses to Information Requested by the Ohio HWFB Technical Staff transmitted to Bob Brown of the State of Ohio Hazardous Waste Facility Board dated March 12, 1996.

FACTOR CONSIDERED	AFFECTS RB H YES	AFFECTS RB H NO	RECOMMENDATION/CONCLUSION	REFERENCE
Underground Storage Tanks (USTs)	✓		There are no USTs located within RB H.	EG&G Mound Applied Technologies, Active Underground Storage Tank Plan, November 1994.
Wetlands	✓		Three characteristics must be present to be classified as jurisdictional wetlands: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetlands hydrology. Absence of any one of these characteristics removes an area from consideration. None of the sites examined within Release Block H constitute jurisdictional wetlands	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994.
Floodplains	✓		A small portion of the northeast corner of Release Block H lies within the 100-year floodplain. Consistent with 10 CFR 1022, the applicability of floodplain regulations to the property must be disclosed to the new owner.	SOF for the Floodplain Assessment for the Transfer of Parcel H, April 26, 1999.

### III. FINDING OF SUITABILITY TO TRANSFER

In accordance with the provisions of CERCLA Section 120 (h), contaminated property can only be transferred if one of the following applies:

- (1) a remedial action has been taken that protects human health and the environment and EPA deems this condition to be satisfied if a remedy has been constructed and is operating successfully,
- (2) a decision has been made that no remedial action is necessary.

This future industrial use of the Mound Plant has been determined based upon agreement among US DOE, US EPA and OEPA, and interested stakeholders. This land use is reflected in the Mound Comprehensive Reuse Plan of the Miamisburg Mound Community Improvement Corporation (MMCIC) and is currently codified in the City of Miamisburg Zoning Ordinance for industrial use.

A joint agency decision among the US DOE, US EPA and OEPA has been made that a remedial action has been taken that protects human health and the environment. EPA deems this condition to be satisfied if the Institutional Controls are implemented and operating successfully. Institutional controls in the form of deed restrictions on future land use will be placed on RB H upon transfer as part of the remedy. The objective of these institutional controls is to prevent an unacceptable risk to human health and the environment by restricting the use of RB H, including RB H soils, to that which is consistent with assumptions in the RB H RRE. DOE or its successors will retain the right and responsibility to monitor, maintain, and enforce these institutional controls. The following property deed restrictions and requirements will be imposed on the property to maintain protection of human health and the environment in the future:

1. Ensure that industrial land use is maintained;
2. Prohibit the use of bedrock ground water;
3. Provide site access for federal and state agencies for the purpose of taking response actions, including sampling and monitoring; and
4. Prohibit removal of RB H soils from the DOE Mound property (as owned in 1998) boundary without approval from ODH and OEPA, or their successor agencies.

## V. ENVIRONMENTAL COVENANTS

DOE is committed to include a covenant in accordance with Section 120 (h)(3) of CERCLA in the deed for the sale or transfer of the property that warrants that:

- A. All remedial action necessary to protect human health and the environment has been taken as long as the deed restrictions limiting land and ground water use are in effect and enforced.
- B. Any additional response action or corrective action found to be necessary after the date of sale or transfer shall be conducted by the United States [Section 120(h)(4)(D)(i)]. The requirements of the covenant shall not apply in any case in which the person or entity to whom the property is transferred is a potentially responsible party with respect to the property.
- C. A clause granting the United States access to the property in any case in which a response action or corrective action is found to be necessary or such access is necessary to carry out a response action or corrective action on the adjoining property [Section 120 (h)(4)(D)(ii)]

## VI. NOTIFICATION/PUBLIC PARTICIPATION

The community has been an active participant in this process to date. Comments from the public on the PRS recommendation have been incorporated as part of the remedy evaluation. DOE believes all comments have been resolved with the commentor and the documents, comments, and responses have been placed in the CERCLA Public Reading Room.

Table 6.1 lists the RB H PRS package, RB H RRE, and RB H Proposed Plan along with the dates they were made available for public comment.

**Table 6.1 Release Block H Documents and Public Comment Periods**

<b>DOCUMENT/PRS</b>	<b>COMMENT PERIOD (BEGIN)</b>	<b>COMMENT PERIOD (END)</b>
PRS 93	March 18, 1996	April 1, 1996
RB H Residual Risk Evaluation	April 30, 1997	June 16, 1997
Technical Position Report in Support of Release Block H Residual Risk Evaluation	May 5, 1999	June 5, 1999
Proposed Plan for RB H	May 5, 1999	June 5, 1999

Parcel H

QUITCLAIM DEED

DIV/2.9

146-5-1-10

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel H:

Situated in the State of Ohio, County of Montgomery, and in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and containing 14.29 acres, more or less, and being more fully described in Exhibit A attached hereto and incorporated herein.

0023295

\$ .00

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

TRANSFERRED  
1999 DEC 20 AM 9:13  
AUDITING  
WAGNER

200481  
Closed  
2004/07

- 1.1 Excepting those soils contained within an area bounded as follows:  
**Commencing** at an iron pin found on the southerly projection of the centerline of Mound Road, said point also being the northeast corner of a 164.13 Acre tract of land as described in Deed Book 1246, Page 45 of the Deed Records of Montgomery County and being the **TRUE POINT OF BEGINNING**, thence South 06° 38' 48" West, 100.00 feet to an iron pin found; thence South 84° 42' 56" East, 193.40 feet to an iron pin found; thence South 05° 33' 53" West, 571.98 feet to a point on the centerline of Mound Road; thence due West, 72.93 feet to a point; thence South 51° 28' 10" West, 9.97 feet to a point on the proposed westerly right-of-way of Mound Road; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 299.85 feet to a point; thence North 04° 05' 41" West, 185.03 feet to a point; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 75.76 feet to a point; thence along the proposed westerly right-of-way of Mound Road, on a curve to the right for a distance of 130.93 feet with a radius of 923.62 feet and a central angle of 08° 07' 19" and a chord distance of 130.82 feet and a chord bearing of North 02° 30' 42" West to a point; thence along the existing westerly right-of-way of Mound Road, on a non-tangent curve to the right for a distance of 6.10 feet with a radius of 360.00 feet and a central angle of 00° 58' 18" and a chord distance of 6.10 feet and a chord bearing of North 12° 20' 00" West to a point; thence South 89° 52' 28" East, 18.27 feet to the **POINT OF BEGINNING**, containing 6.604 acres more or less. Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book (1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11) of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block H, Mound Plant, Miamisburg, Ohio dated July 26, 1999 without prior written approval from ODH and OEPA, or successor agencies.
- 1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:
- (1) single or multifamily dwellings or rental units;
  - (2) day care facilities;
  - (3) schools or other educational facilities for children under eighteen years of age; and
  - (4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

- 1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.
2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.
3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.
  - 3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.
  - 3.2 **Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.
  - 3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.
4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this 4<sup>th</sup> day of August, 1999.

UNITED STATES OF AMERICA

Susan R. Brechebi

WITNESSETH:

[Signature]  
Ola Vincent

[Signature]  
Frank Schmatz

State of Ohio )  
County of Montgomery ) SS.

Before me, a Notary Public in and for said State and County, appeared this 4<sup>th</sup> day of August, 1999, SUSAN R. BRECHBILL, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

SEAL

[Signature]  
Notary Public

DERRICK J. C. FRANKLIN, Notary Public  
In and for the State of Ohio  
My Commission Expires Dec. 25, 2000

This document was prepared by the U.S. Department of Energy.

**NO PLAT REQUIRED**  
(SEC 711.131 ORC)  
MIAMISBURG CITY PLANNING COMMISSION  
[Signature]  
Secretary

DESCRIPTION OF

14.288 Acres

located in

Section 30&36, Fractional Town 2, Range 5 MRS

Section 25, Fractional Town 1, Range 6 MRS

part of

City of Miamisburg Lot No. 2259

D/V/2,9

K46-5-1-10

December 09, 1999

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30 & 36, Fractional Town 2, Range 5 M.R.S. also part of Section 25, Fractional Town 1, Range 6 MRS and being part of City of Miamisburg Lot No. 2259 and being part of a tract of land conveyed to The United States of America as described in Deed Book 1214, Page 12-14, also part of a tract of land conveyed to the United States of America as described in Deed Book 1246, Page 49 and being more particularly described as follows:

**COMMENCING** at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, **THENCE** with the west line of said Section 30, **South 05° 45' 57" West for a distance of 130.89 feet to a 1" Pinch Top Pipe Found** at the Southwest corner of a 2.90 acre tract conveyed to Robert P. Heist as described in Deed MF 74-526-C09 and at the **TRUE POINT OF BEGINNING** of the herein described tract;

**THENCE** with the south line of said 2.90 Acre Heist Lands, **South 85° 04' 57" East for a distance of 1023.91 feet to a Concrete Monument with brass disc Found** at the Southeast corner of said 2.90 Acre Heist Lands;

**THENCE** with the east line of said 2.90 Acre Heist Lands and the west right of way line of Mound Street extended, **North 06° 53' 16" East for a distance of 231.00 feet to a Concrete Monument with brass disc Found**, (passing a 5/8" Rebar Set at 100.99 feet, also passing a 5/8" Rebar Set on the North line of Section 30 at 129.56 feet);

**THENCE** leaving said right of way line, **South 84° 38' 35" East for a distance of 30.00 feet to a 5/8" Rebar Capped Found (LJB)** on the centerline of said Mound Street;

**THENCE** with the centerline of said Mound Street, **South 06° 53' 16" West for a distance of 100.00 feet to a 5/8" Rebar Capped Found (LJB)**;

**THENCE** continuing with said centerline of said Mound Street, **South 84° 38' 08" East for a distance of 193.41 feet** to the Northwest Corner of the Roads End Plat as recorded in Plat Book DD, Page 75, (witness a 5/8" Rebar Found bearing South 63° 34' 50" East at a distance of 0.30 feet from the Northwest corner of said plat);

DEED

99-0852

C03

***THENCE*** continuing with said centerline of said Mound Street, ***South 05° 32'42" West for a distance of 571.99 feet to a Mag Nail Set;***

***THENCE*** on a new division line, ***South 89° 58' 18" West for a distance of 72.86 feet to a 5/8" Rebar Set;***

***THENCE*** continuing on a new division line, ***South 51° 26'20" West for a distance of 48.51 feet to a 5/8" Rebar Set;***

***THENCE*** continuing on a new division line, ***South 83° 30'22" West for a distance of 97.29 feet to a 5/8" Rebar Set;***

***THENCE*** continuing on a new division line, ***South 63°47'11" West for a distance of 98.67 feet to a 5/8" Rebar Set;***

***THENCE*** continuing on a new division line, ***North 89° 57'40" West for a distance of 173.02 feet to a 5/8" Rebar Set;***

***THENCE*** continuing on a new division line, ***North 83° 51'21" West for a distance of 247.27 feet to a 5/8" Rebar Set;***

***THENCE*** continuing on a new division line on a ***TANGENT CURVE to the RIGHT*** with a ***RADIUS of 360.67 feet, a DELTA ANGLE of 58° 46'33", a ARC LENGTH of 369.99 feet with a CHORD BEARING of North 54° 28'04" West for a CHORD DISTANCE of 353.98 feet to a 5/8" Rebar Set;***

***THENCE*** continuing on a new division line, ***North 25° 04'47" West for a distance of 194.43 feet to a 5/8" Rebar Set;***

***THENCE*** continuing on a new division line, ***South 64° 01'25" West for a distance of 37.94 feet to a 5/8" Rebar Set;***

***THENCE*** continuing on a new division line, ***North 64° 37' 16" West for a distance of 56.61 feet to a 5/8" Rebar Set;***

***THENCE*** continuing on a new division line, ***North 25° 44'48" West for a distance of 160.76 feet to a 5/8" Rebar Set, (passing a 5/8" Rebar Set at 99.15 feet on the west line of said Section 30);***

***THENCE*** continuing on a new division line through Section 36, ***North 65° 31'15" East for a distance of 35.05 feet to a 5/8" Rebar Set on the East line of said Section 36;***

***THENCE*** with the East line of said Section 36, ***North 05° 29'16" East for a distance of 57.67 feet BACK TO THE TRUE POINT OF BEGINNING.***

Described tract contains 14.288 Acres more or less. North based on State Plane Coordinates, South Zone State of Ohio as taken from a drawing prepared by Lockwood, Jones and Beals dated 6-01-82, Project No. 2149. This Description is based on an actual Field Survey performed by HLS Surveyors and Engineers under the direct supervision of William C. LeRoy P.S. Ohio License Number 7664. Subject to all Easements, Highways, Covenants and Restrictions of Public Record.

Also subject to a Soil Exclusion Easement being more particularly described as follows:

**COMMENCING** at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, **THENCE** with the west line of said Section 30, **South 05° 45' 57" West for a distance of 130.89 feet to a 1" Pinch Top Pipe Found** at the Southwest corner of a 2.90 acre tract conveyed to Robert P. Heist as described in Deed MF 74-526-09;

**THENCE** with the south line of said 2.90 Acre Heist Lands, **South 85° 04' 57" East for a distance of 1023.91 feet to a Concrete Monument with brass disc Found** at the Southeast corner of said 2.90 Acre Heist Lands;

**THENCE** with the east line of said 2.90 Acre Heist Lands and the west right of way line of Mound Street extended, **North 06° 53' 16" East for a distance of 231.00 feet to a Concrete Monument with brass disc Found**, (passing a 5/8" Rebar Set at 100.99 feet, also passing a 5/8" Rebar Set on the North line of Section 30 at 129.56 feet) and the **TRUE POINT OF BEGINNING** of the herein described tract;

**THENCE** leaving said right of way line, **South 84° 38' 35" East for a distance of 30.00 feet to a 5/8" Rebar Capped Found (LJB)** on the centerline of said Mound Street;

**THENCE** with the centerline of said Mound Street, **South 06° 53' 16" West for a distance of 100.00 feet to a 5/8" Rebar Capped Found (LJB)**;

**THENCE** continuing with said centerline of said Mound Street, **South 84° 38' 08" East for a distance of 193.41 feet** to the Northwest Corner of the Roads End Plat as recorded in Plat Book DD, Page 75, (witness a 5/8" Rebar Found bearing South 63° 34' 50" East at a distance of 0.30 feet from the Northwest corner of said plat);

**THENCE** continuing with said centerline of said Mound Street, **South 05° 32' 42" West for a distance of 571.99 feet to a Mag Nail Set**;

**THENCE** with a new division line, **South 89° 58' 18" West for a distance of 72.86 feet to a 5/8" Rebar Set**;

**THENCE North 06° 48'23" West for a distance of 694.41 feet BACK TO THE TRUE POINT OF BEGINNING.**

Said Easement contains 1.840 Acres more or less.



William C. LeRoy P.S.  
Ohio License No. 7664  
12-9-99



RECORDED  
MAY 13 1999  
MONTGOMERY COUNTY

JOSEPH LITVIN P.E., P.S.  
COUNTY ENGINEER  
MONTGOMERY COUNTY DAYTON, OHIO  
DESCRIPTION CHECKED AND APPROVED  
BY EDM DATE 12/16/99

A.J. WAGNER  
MONTGOMERY COUNTY AUDITOR  
DIVISION

PARCEL H MOUND 99152ph.dwg

Does  
contain access clause

Appendix A

Quitclaim Deed for RB-H

## QUITCLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C. §2201(g), the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described premises, commonly known as Parcel H:

Situate in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

Beginning at a concrete monument, being the North East corner of Section 36 and the North West corner of Section 30, and being the point of beginning for the land herein described, thence S 5° 47' 45" W 130.89 feet to an iron pin being the TRUE POINT OF BEGINNING; thence S 85° 03' 12" E 1023.90 feet to a concrete monument, thence N 6° 54' 59" E 231.00 feet to a concrete monument, thence S 84° 36' 50" E 30.00 feet to a iron pin, thence S 6° 54' 54" W 100.00 feet to a iron pin, thence S 84° 36' 37" E 193.40 feet to a concrete monument, thence S 5° 34' 19" W 571.986 feet along the center line of Mound Road to a point, thence S 90° 0' 0" W 72.86 feet to a point, thence S 51° 28' 1.6" W 48.51 feet to a point, thence S 83° 32' 4" W 97.29 feet to a point, thence S 63° 48' 53" W 98.67 feet to a point, thence N 89° 55' 58" W 173.02 feet to a point, thence N 83° 49' 39" W 244.21 feet to a point, thence along the arc of a curve to the right having a radius of 360.67 feet for a distance of 353.12 feet to a point, thence N 25° 03' 02" W 214.48 feet to a point, thence S 64° 03' 10" W 37.94 feet to a point, thence N 64° 35' 31" W 56.61 feet to a point, thence N 25° 43' 03" W 160.76 feet to a point, thence N 65° 33' 00" E 35.05 feet to a point, thence N 5° 31' 01" E 57.67 feet to a iron pin being the true point of beginning containing 14.29 acres more or less, and subject to all legal highways and easements of record. Prior Deed Reference: Deed Book \_\_\_\_\_, Page \_\_\_\_.

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of

Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.
  - 1.1 Excepting those soils **Commencing** at an iron pin found on the southerly projection of the centerline of Mound Road, said point also being the northeast corner of a 164.13 Acre tract of land as described in Deed Book 1246, Page 45 of the Deed Records of Montgomery County and being the **TRUE POINT OF BEGINNING**, thence South 06° 38' 48" West, 100.00 feet to an iron pin found; thence South 84° 42' 56" East, 193.40 feet to an iron pin found; thence South 05° 33' 53" West, 571.98 feet to a point on the centerline of Mound Road; thence due West, 72.93 feet to a point; thence South 51° 28' 10" West, 9.97 feet to a point on the proposed westerly right-of-way of Mound Road; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 299.85 feet to a point; thence North 04° 05' 41" West, 185.03 feet to a point; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 75.76 feet to a point; thence along the proposed westerly right-of-way of Mound Road, on a curve to the right for a distance of 130.93 feet with a radius of 923.62 feet and a central angle of 08° 07' 19" and a chord distance of 130.82 feet and a chord bearing of North 02° 30' 42" West to a point; thence along the existing westerly right-of-way of Mound Road, on a non-tangent curve to the right for a distance of 6.10 feet with a radius of 360.00 feet and a central angle of 00° 58' 18" and a chord distance of 6.10 feet and a chord bearing of North 12° 20' 00" West to a point; thence South 89° 52' 28" East, 18.27 feet to the **POINT OF BEGINNING**.

Containing 287,684.98 square feet, 6.604 acres more or less, and subject to all legal highways, easements, and agreements of record. Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book (1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche

81-323A11) of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block H, Mound Plant, Miamisburg, Ohio dated \_\_\_\_\_, 1999) without prior written approval from ODH and OEPA, or successor agencies.

- 1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

- (1) single or multifamily dwellings or rental units;
- (2) day care facilities;
- (3) schools or other educational facilities for children under eighteen years of age; and
- (4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

- 1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.
2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.
3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.
- 3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.
- 3.2 **Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

- 3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.
4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

UNITED STATES OF AMERICA

WITNESSETH:

\_\_\_\_\_  
 \_\_\_\_\_

State of Ohio )  
 County of Montgomery ) SS.

Before me, a Notary Public in and for said State and County, appeared this \_\_\_\_\_ day of \_\_\_\_\_, 1999, \_\_\_\_\_, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

SEAL

\_\_\_\_\_  
 Notary Public

Appendix B

Legal Description of RB H

## H "Wedge"

Situate in the County of Montgomery, in the State of Ohio and in the City of Miamisburg, part of Section 25, Town 1, Range 6 MRs and part of Section 30, Town 2, Range 5 MRs and being more particularly described as follows: **Commencing** at an iron pin found on the southerly projection of the centerline of Mound Road, said point also being the northeast corner of a 164.13 Acre tract of land as described in Deed Book 1246, Page 45 of the Deed Records of Montgomery County and being the **TRUE POINT OF BEGINNING**,

thence South  $06^{\circ} 38' 48''$  West, 100.00 feet to an iron pin found; thence South  $84^{\circ} 42' 56''$  East, 193.40 feet to an iron pin found; thence South  $05^{\circ} 33' 53''$  West, 571.98 feet to a point on the centerline of Mound Road; thence due West, 72.93 feet to a point; thence South  $51^{\circ} 28' 10''$  West, 9.97 feet to a point on the proposed westerly right-of-way of Mound Road; thence along the proposed westerly right-of-way of Mound Road, North  $06^{\circ} 34' 20''$  West, 299.85 feet to a point; thence North  $04^{\circ} 05' 41''$  West, 185.03 feet to a point; thence along the proposed westerly right-of-way of Mound Road, North  $06^{\circ} 34' 20''$  West, 75.76 feet to a point; thence along the proposed westerly right-of-way of Mound Road, on a curve to the right for a distance of 130.93 feet with a radius of 923.62 feet and a central angle of  $08^{\circ} 07' 19''$  and a chord distance of 130.82 feet and a chord bearing of North  $02^{\circ} 30' 42''$  West to a point; thence along the existing westerly right-of-way of Mound Road, on a non-tangent curve to the right for a distance of 6.10 feet with a radius of 360.00 feet and a central angle of  $00^{\circ} 58' 18''$  and a chord distance of 6.10 feet and a chord bearing of North  $12^{\circ} 20' 00''$  West to a point; thence South  $89^{\circ} 52' 28''$  East, 18.27 feet to the **POINT OF BEGINNING**.

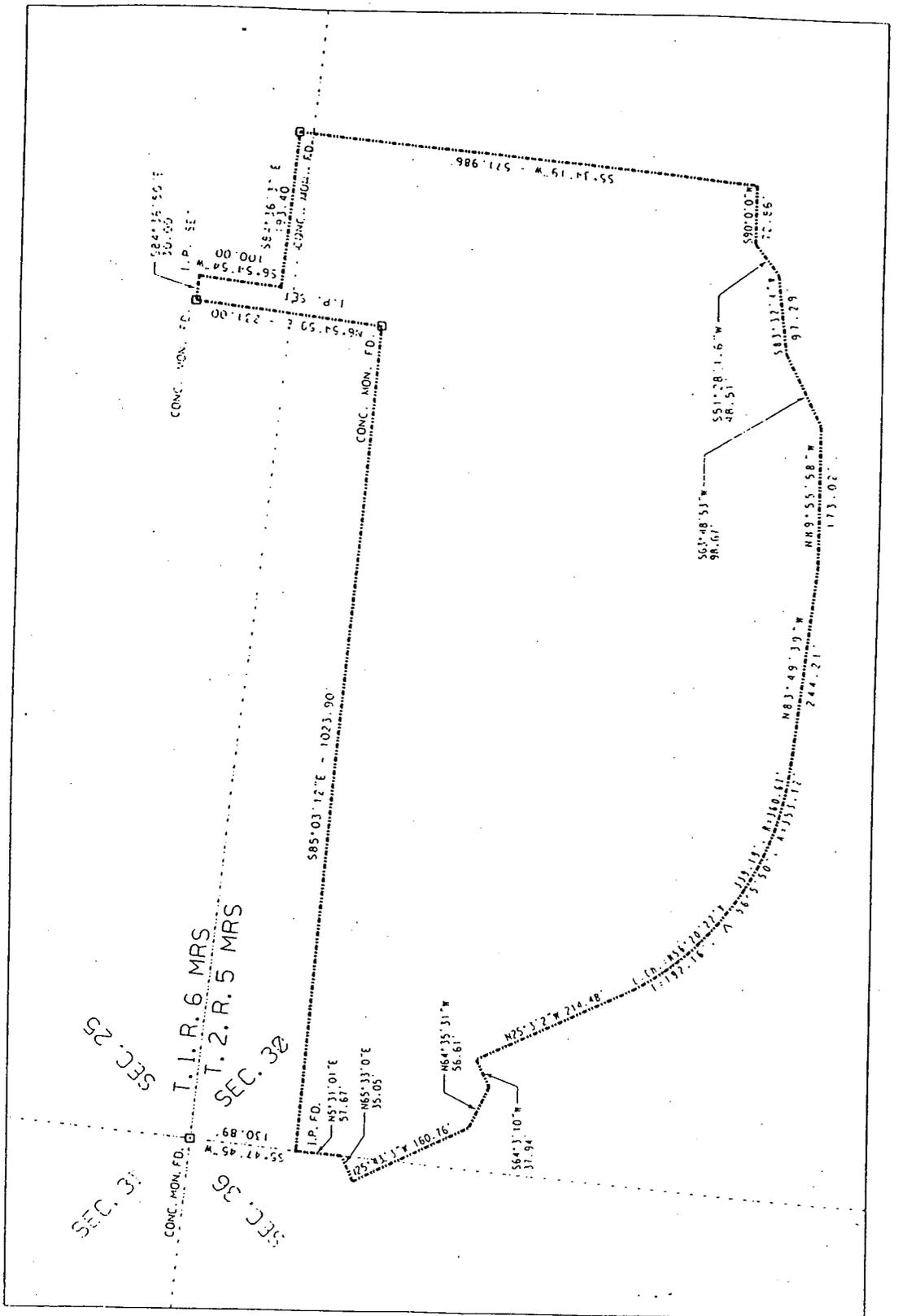
Containing 82,149.70 square feet, 1.886 acres more or less, and subject to all legal highways, easements, and agreements of record.



## Release Block H

Situate in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, and Section 36, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2258 and 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

Beginning at a concrete monument, being the North East corner of Section 36 and the North West corner of Section 30, and being the point of beginning for the land herein described, thence S 5° 47' 45" W 130.89 feet to an iron pin being the TRUE POINT OF BEGINNING; thence S 85° 03' 12" E 1023.90 feet to a concrete monument, thence N 6° 54' 59" E 231.00 feet to a concrete monument, thence S 84° 36' 50" E 30.00 feet to a iron pin, thence S 6° 54' 54" W 100.00 feet to a iron pin, thence S 84° 36' 37" E 193.40 feet to a concrete monument, thence S 5° 34' 19" W 571.986 feet along the center line of Mound Road to a point, thence S 90° 0' 0" W 72.86 feet to a point, thence S 51° 28' 1.6" W 48.51 feet to a point, thence S 83° 32' 4" W 97.29 feet to a point, thence S 63° 48' 53" W 98.67 feet to a point, thence N 89° 55' 58" W 173.02 feet to a point, thence N 83° 49' 39" W 244.21 feet to a point, thence along the arc of a curve to the right having a radius of 360.67 feet for a distance of 353.12 feet to a point, thence N 25° 03' 02" W 214.48 feet to a point, thence S 64° 03' 10" W 37.94 feet to a point, thence N 64° 35' 31" W 56.61 feet to a point, thence N 25° 43' 03" W 160.76 feet to a point, thence N 65° 33' 00" E 35.05 feet to a point, thence N 5° 31' 01" E 57.67 feet to a iron pin being the true point of beginning containing 14.29 acres more or less, and subject to all legal highways and easements of record.



### 1.3 Site Assessment

As documented in the Residual Risk Evaluation (RRE) for RB H and the Technical Position Report in Support of the RB H RRE, the risks from carcinogens and non-carcinogens to current and future occupants of RB H were evaluated. In those analyses, the type of occupant was limited to an industrial use scenario and was represented by a construction worker and a site employee (office employee). Based on the RRE, the risks for current industrial use are within the acceptable range. However, in order to ensure that future use of the site conforms to the RRE assumptions, it was necessary to consider a remedy that would prevent the site from being used for non-industrial purposes.

As described below, the remedy will protect future occupants of RB H from the threat of contaminants in the groundwater, and will ensure that RB H soils are appropriately evaluated prior to any removal of RB H soils from the Mound Plant National Priority List (NPL) facility boundary.

### 1.4 Description of Selected Remedy

The selected remedy for RB H is institutional controls in the form of deed restrictions on future land use. DOE or its successors, as the lead agency for this ROD, has the responsibility to monitor, maintain and enforce these institutional controls. In order to maintain protection of human health and the environment at RB H in the future, the Institutional controls to be adopted will:

- ▶ Ensure that industrial land use is maintained;
- ▶ Prohibit the use of bedrock ground water;
- ▶ Provide site access for federal and state agencies for the purpose of taking response actions, including sampling and monitoring; and
- Prohibit removal of RB H soils from the DOE Mound property (as owned in 1998) boundary without approval from the Ohio Department of Health (ODH) and the Ohio Environmental Protection Agency (OEPA), or their successor agencies.

A copy of the deed is attached in Appendix A.

### 1.5 Statutory Determinations

The selected remedy for RB H is protective of human health and the environment,



**Parcel 3**



43 pgs  
#178.0

Div 110

K46-5-1-12

**QUIT CLAIM DEED**

Div 113

K46-5-3-28

TRANSFER  
02:17 PM  
OCTOBER 17, 2002  
KARL L. KEITH, COUNTY AUDITOR  
Conv/Tran #: 20488 \$ .00

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic energy Act of 1954, Section 161 (g) (42U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUIT CLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel 3:

Situated in the State of Ohio, County of Montgomery and being parts of City of Miamisburg Lot Number 2259 and 2290, also being part of Sections 30, Fractional Town 2, Range 5 East M.R.S. and Fractional Section 36, Fractional Town 2, Range 5 East M.R.S. and being a portion previously conveyed to USA as described in Deed Book 1246, Page 45 and also being a portion previously conveyed to USA as described in Deed Book 1214, Page 12 and also being a portion previously conveyed to USA as described in Deed Book 1256, Page 179 containing 4.805 acres, more or less, and being more fully described in Exhibit A attached hereto and incorporated herein.

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and, or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

This Deed and conveyance is made and accepted without warranty of any kind, either expressed or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

- 1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

Prepared	
Checked	<i>W</i>
Filed	
Coded	
Entered	
Verified	
Indexed	

\$178.00 10/18/02 07:59:19  
DEED-02-128206 0043  
Montgomery County  
Judy Dodge Recorder

020460

1.1 Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book (1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11) of the Deed Records of Montgomery County, Ohio (and as illustrated in the Parcel 3 Environmental Summary, Notices of Hazardous Substances, Mound Plant, Miamisburg, Ohio dated \_\_\_\_\_ without prior written permission approval from ODH and OEPA, or successor agencies.

1.2 Grantee covenants not to use, or allow the use of the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

- (1) single or multi family dwellings or rental units;
- (2) day care facilities;
- (3) schools or other educational facilities for children under eighteen years of age; and
- (4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

- 3.2 **Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.
- 3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.
- 4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this 8<sup>th</sup> day of August, 2002.

UNITED STATES OF AMERICA

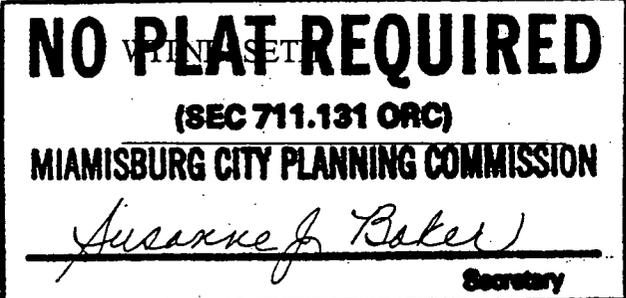
[Signature]

WITNESSETH:

[Signature]

[Signature]

[Signature]



State of Ohio )  
County of Montgomery ) SS.

Before me, a Notary Public in and for said State and County, appeared this 8<sup>th</sup> day of August, 2002, SACK R. CRAIG, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

SEAL

[Signature]  
Notary Public

Joan Wysong, Notary Public  
In and for the State of Ohio  
My Commission Expires June 28, 2004

Exhibit "A"  
DESCRIPTION OF  
4.805 Acres

located in  
Northwest Quarter Section 30  
Northeast Quarter Fractional Section 36  
Town 2, Range 5, M.Rs.  
City of Miamisburg, Montgomery County, Ohio

DIV/10  
446-5-1-12  
DIV/13 446-5-3-28

Situate in the Northwest Quarter of Section 30 and the Northeast Quarter of Fractional Section 36, Town 2, Range 5, M.Rs., City of Miamisburg, County of Montgomery, State of Ohio, *being part of a remainder tract of 7.35 acres as conveyed to the United States of America, as recorded in Deed Book Volume 1246, Page 45, known as Tract No. A-109, of the Deed Records of Montgomery County, Ohio, said 7.35 acre tract also being part of Lot Numbered 2259 of the City of Miamisburg, Ohio, being part of a 1.61 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1256, Page 179, known as Tract No. A-110, of the Deed Records of Montgomery County, Ohio, being part of a 87.28 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 12 of the Deed Records of Montgomery County, Ohio, said 87.28 acre tract also being known as part of Lot Numbered 2259 and part of Lot Numbered 2290 of the City of Miamisburg, Ohio, said 1.61 acre tract also being part of Lots Numbered 6 and 7 of the Philip Gebhart plat as recorded in Record Plat Book Volume "A", Page 126 of the Plat Records of Montgomery County, Ohio, said 87.28 acre tract also being part of Lots Numbered 6, 7 and 14 of said Philip Gebhart plat, being a new division from said remainder 7.35 acre tract, 1.61 acre tract and 87.28 acre tract and being more fully bounded and described as follows:*

**Commencing** at a Broken Concrete Monument found, said monument being the northwest corner of the Northwest Quarter of Section 30 and the northeast corner of the Northeast Quarter of Fractional Section 36, said monument also being the northwest corner of a 9.443 acre tract conveyed to Robert P. Heist, as recorded in Deed Microfiche No. 74-0526C09 of the Deed Records of Montgomery County, Ohio, said 9.443 acre tract being known as Lot Numbered 2258 of the City of Miamisburg, Ohio; thence with the west line of said Heist 9.443 acre tract, South 05° 45' 57" West, a distance of 130.89 feet to a 1" pinched top pipe found, said pipe being the northwest corner of said United States of America 7.35 acre remainder tract, also the northwest corner of Lot Numbered 2259 of the City of Miamisburg, Ohio, said iron pipe also being the northwest corner of a 14.288 acre tract conveyed to the Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B11 of the Deed Records of Montgomery County, Ohio, said iron pipe being the **True Point of Beginning** of the hereinafter described 4.805 acre tract;

**Thence** with the west line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, South 05° 29' 16" West, a distance of 57.67 feet to a 5/8" iron pin reset, said iron pin found bent, pulled and reset new iron pin;

**Thence** with a northwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, South 65° 31' 15" West, a distance of 35.05 feet to a 5/8" iron pin set;

Thence with a southwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **South 25° 44' 48" East**, passing a point in the southeasterly line of said United States of America 1.61 acre tract and the north line of said United State of America 87.28 acre tract at 37.08 feet, also passing a point in the west line of the Northwest Quarter of Section 30 and the east line of the Northeast Quarter of Fractional Section 36 at 61.61 feet, in all a distance of 160.76 feet to a 2" mag nail set;

Thence with a southerly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **South 64° 37' 16" East**, passing a point on a southerly line of said United States of America 7.35 acre remainder tract and a northerly line of said United State of America 87.28 acre tract at 52.82 feet, in all a distance of 56.61 feet to a 5/8" iron pin set;

Thence with a southeasterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **North 64° 01' 25" East**, passing a point on a southeasterly line of said United States of America 7.35 acre remainder tract and a northwesterly line of said United State of America 87.28 acre tract at 2.58 feet, in all a distance of 37.94 feet to a 5/8" iron pin found with an identification cap marked "LeRoy, 7664";

Thence with a southwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **South 25° 04' 47" East**, passing a point on the south line of said United States of America 7.35 acre remainder tract and the north line of said United State of America 87.28 acre tract at 20.96 feet, in all a distance of 194.43 feet to a 5/8" iron pin found with an identification cap marked "LeRoy, 7664", said iron pin being a point of curvature for a curve to the left;

Thence with a southwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract on a curve to the left, having a delta angle of **28° 31' 32"**, a radius of 360.67 feet, an arc length of 179.57 feet and a chord bearing and distance of **South 39° 20' 33" East, 177.72 feet** to a 5/8" iron pin set, said iron pin being the easterly corner of the herein described 4.805 acre tract;

Thence with new division line on the following thirteen (13) courses,

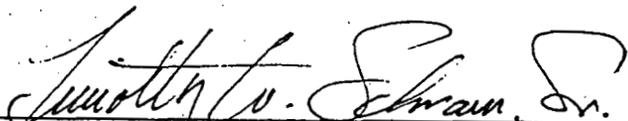
- 1) South 40° 10' 30" West, a distance of 91.47 feet to a 5/8" iron pin set;
- 2) Thence, South 23° 05' 31" East, a distance of 17.73 feet to a 5/8" iron pin set;
- 3) Thence, South 64° 44' 27" West, a distance of 98.64 feet to a 5/8" iron pin set;
- 4) Thence, North 50° 06' 58" West, a distance of 22.74 feet to a railroad spike set;
- 5) Thence, South 66° 03' 34" West, a distance of 39.97 feet to a railroad spike set;
- 6) Thence, North 23° 47' 05" West, a distance of 359.64 feet to a railroad spike set;
- 7) Thence, North 59° 41' 15" West, passing a point in the west line of the Northwest Quarter of Section 30 and the east line of the Northeast Quarter of Fractional Section 36 at 2.89 feet, in all a distance of 32.00 feet to a railroad spike set;
- 8) Thence, South 65° 05' 15" West, a distance of 34.64 feet to a railroad spike set;
- 9) Thence, South 24° 54' 45" East, a distance of 59.55 feet to a cross notch set in concrete;
- 10) Thence, South 65° 11' 32" West, a distance of 268.32 feet to a 5/8" iron pin set;
- 11) Thence, North 24° 26' 30" West, a distance of 24.31 feet to a railroad spike set;
- 12) Thence, North 65° 33' 30" East, a distance of 7.67 feet to a 2" mag nail set;

13) Thence, North 24° 26' 30" West, passing a point in the on the south line of said United States of America 1.61 acre remainder tract and the north line of said United State of America 87.28 acre tract at 221.39 feet, a distance of 308.52 feet to a 5/8" iron pin set, said iron pin lying in the north line of said United States of America 1.61 acre tract;

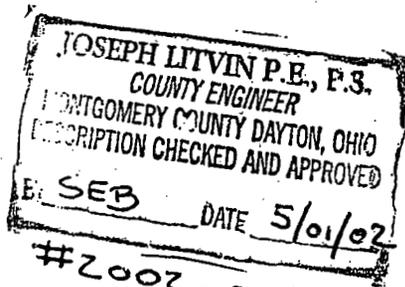
Thence with the north line of said United States of America 1.61 acre tract, North 65° 36' 29" East, a distance of 478.50 feet to the *True Point of Beginning*, containing 4.805 acres, more or less, of which 1.952 acres being in the Northwest Quarter of Section 30 and 2.853 acres being in the Northeast Quarter of Fractional Section 36, subject to all easements and right of ways of record.

Bearing basis established per previous survey by HLS Surveyors & Engineers dated December 9, 1999 and recorded in Records of Land Survey Volume 1999, Page 0325 of the Montgomery County Engineer's Record of Land Surveys and Deed Microfiche No. 99-0852B11 of the Deed Records of Montgomery County, Ohio, along the north line of Parcel "H" as noted on said referenced survey plat, bearing of South 85° 04' 57" East.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract.



Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299  
of the State of Ohio, March 10, 2002.



~~Does~~  
~~Don't~~ have  
Access clause

**APPENDIX A**

---

---

**Quit Claim Deed for Parcel 3**

APPENDIX A

---

---

Quit Claim Deed for Parcel 3

## QUIT CLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUIT CLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel 3:

Situated in the State of Ohio, County of Montgomery and being parts of City of Miamisburg Lot Number 2259 and 2290, also being part of Sections 30, Fractional Town 2, Range 5 East M.R.S. and Fractional Section 36, Fractional Town 2, Range 5 East M.R.S. and being a portion previously conveyed to USA as described in Deed Book 1246, Page 45 and also being a portion previously conveyed to USA as described in Deed Book 1214, Page 12 and also being a portion previously conveyed to USA as described in Deed Book 1256, Page 179 containing 5.581 acres, more or less, and being more fully described in Exhibit A attached hereto and incorporated herein.

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and, or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

This Deed and conveyance is made and accepted without warranty of any kind, either expressed or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

1.1 Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book (1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11) of the Deed Records of Montgomery County, Ohio (and as illustrated in the Parcel 3 Environmental Summary, Notices of Hazardous Substances, Mound Plant, Miamisburg, Ohio dated \_\_\_\_\_ without prior written permission approval from ODH and OEPA, or successor agencies.

1.2 Grantee covenants not to use, or allow the use of the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

- (1) single or multi family dwellings or rental units;
- (2) day care facilities;
- (3) schools or other educational facilities for children under eighteen years of age; and
- (4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

- 3.2 **Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.
- 3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.
4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this \_\_\_\_\_ day of \_\_\_\_\_, 2001.

UNITED STATES OF AMERICA

WITNESSETH:

\_\_\_\_\_  
 \_\_\_\_\_

State of Ohio )  
 County of Montgomery ) SS.

Before me, a Notary Public in and for said State and County, appeared this \_\_\_\_ day of \_\_\_\_\_, 2001, \_\_\_\_\_, who acknowledged that she is the Manager of the Ohio Field Office for the Unites States Department of Energy, with full authority to execute the foregoing on behalf of the Unites States of America, and who acknowledged the above to be her signature and her free act and deed.

SEAL

\_\_\_\_\_  
 Notary Public

**APPENDIX A, Exhibit A**

---

---

**Legal Description of Parcel 3**

*Exhibit "A"*  
*for*  
*Mound Parcel Three*  
containing  
*5.581 Acres*

May 4, 2000

Situate in the State of Ohio, County of Montgomery and being parts of City of Miamisburg Lot Numbered 2259 and 2290, also being part of Sections 30, Fractional Town 2, Range 5 East M.R.S. and Fractional Section 36, Fractional Town 2, Range 5 East M.R.S. and being a portion previously conveyed to USA as described in Deed Book 1246, Page 45 and also being a portion previously conveyed to USA as described in Deed Book 1214, Page 12 and also being a portion previously conveyed to USA as described in Deed Book 1256, Page 179 and being more particularly described as follows:

***COMMENCING*** at a Concrete Monument Found (Top Broken Off) at the Northwest corner of the Northwest Quarter of Section 30 said Monument also being the Northeast corner of a 2.90 Acre tract of land conveyed to Robert P. Heist as described in Deed MF 74-0526-C09, ***THENCE*** with the West line of said Heist Lands, ***South 05° 45' 57" West for a distance of 130.89 feet to a 1" Iron Pipe Found Pinched*** at the Southwest corner of said Heist Lands and the Northwest corner of a 14.288 Acre tract conveyed to the Miamisburg Community Corporation as described in Deed MF 99-852-E11 and the ***TRUE POINT OF BEGINNING*** of the herein described tract;

***THENCE*** with the West line of said Miamisburg Community Corporation lands the next seven calls:

- 1) THENCE, South 05° 29' 16" West for a distance of 57.67 feet to a 5/8" Rebar Found with cap (LeRoy);***
- 2) THENCE, South 65° 31' 15" West for a distance of 35.05 feet to a 5/8" Rebar Found with cap (LeRoy);***
- 3) THENCE, South 25° 44' 48" East for a distance of 160.76 feet to a 5/8" Rebar Found with cap (LeRoy);***
- 4) THENCE, South 64° 37' 16" East for a distance of 56.61 feet to a 5/8" Rebar Found with cap (LeRoy);***

5) *THENCE, North 64° 01' 25" East for a distance of 37.94 feet to a 5/8" Rebar Found with cap (LeRoy);*

6) *THENCE, South 25° 04' 47" East for a distance of 194.43 feet to a 5/8" Rebar Found with cap (LeRoy);*

7) *THENCE on a Curve to the Left with a Radius of 360.67 feet, a Arc Length of 180.89 feet, a Delta Angle of 28° 44' 12", with a Chord Bearing of South 39° 26' 53" East and a Chord Distance of 179.00 feet to a 5/8" Rebar Set;*

*THENCE on a new division line through said USA lands, South 40° 10' 27" West for a distance of 91.34 feet to a Cross Notch Set;*

*THENCE continuing on a new division line through said USA lands, South 23° 57' 22" East for a distance of 17.73 feet to a 3 inch Existing Steel Fence Corner Found;*

*THENCE continuing on a new division line through said USA lands, South 64° 21' 58" West for a distance of 99.96 feet to a Mag Nail Set;*

*THENCE continuing on a new division line through said USA lands, North 50° 48' 40" West for a distance of 23.44 feet to a Mag Nail Set;*

*THENCE continuing on a new division line through said USA lands, South 65° 58' 19" West for a distance of 39.91 feet to Cross Notch Set;*

*THENCE continuing on a new division line through said USA lands, North 24° 24' 48" West for a distance of 308.00 feet to a 6 inch Existing Steel Fence Corner Found;*

*THENCE continuing on a new division line through said USA lands, North 59° 05' 44" East for a distance of 2.80 feet to a 6 inch Existing Steel Fence Corner Found;*

*THENCE continuing on a new division line through said USA lands, North 20° 40' 57" West for a distance of 10.55 feet to a Cross Notch Set;*

*THENCE continuing on a new division line through said USA lands, South 67° 51' 08" West for a distance of 3.37 feet to a Cross Notch Set;*

*THENCE continuing on a new division line through said USA lands, North 24° 33' 12" West for a distance of 30.35 feet to a 6 inch Existing Steel Fence Corner Found;*

*THENCE continuing on a new division line through said USA lands, North 50° 32' 22" West for a distance of 26.56 feet to a Mag Nail Set, passing a RR Spike Set at 8.09 feet on the West line of said Section 30;*

*THENCE continuing on a new division line through said USA lands, North 31° 01' 18" West for a distance of 13.93 feet to a Mag Nail Set;*

***THENCE*** continuing on a new division line through said USA lands, ***South 65° 08' 57"***  
***West for a distance of 7.98 feet to a Mag Nail Set;***

***THENCE*** continuing on a new division line through said USA lands, ***South 23° 06' 46"***  
***East for a distance of 13.85 feet to a 4 inch Existing Steel Fence Corner Found;***

***THENCE*** continuing on a new division line through said USA lands, ***South 63° 53' 40"***  
***West for a distance of 26.73 feet to a Cross Notch Set;***

***THENCE*** continuing on a new division line through said USA lands, ***South 24° 54' 44"***  
***East for a distance of 45.10 feet to a Cross Notch Set*** on the Easterly extension of the  
Southerly line of an existing one story brick building named GS1;

***THENCE*** continuing on a new division line through said USA lands and with the  
Southerly line of said GS1 building, ***South 65° 11' 32"*** ***West for a distance of 268.32***  
***feet to a 5/8" Rebar Set***, passing the Southeasterly corner of said GS1 building at 62.6  
feet and the Southwesterly corner of said GS1 building at 263.43 feet;

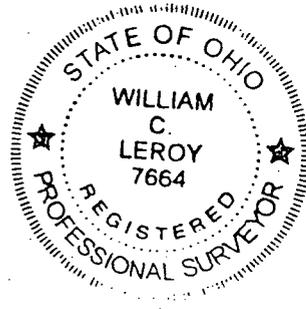
***THENCE*** continuing on a new division line through said USA lands, ***North 24° 25' 19"***  
***West for a distance of 229.01 feet to a Mag Nail Set;***

***THENCE*** continuing on a new division line through said USA lands and with an existing  
fenceline, ***South 65° 33' 23"*** ***West for a distance of 284.61 feet to a Mini RR Spike Set***  
***in a 4 foot wide Concrete Walk at the Joint;***

***THENCE*** continuing on a new division line through said USA lands, ***North 24° 23' 31"***  
***West for a distance of 104.08 feet to a 5/8" Rebar Set*** on the South line of lands  
conveyed to the City of Miamisburg as described in Deed Book 594, Page 410, witness a  
Concrete Monument Found Bearing South 65° 36' 29" East at a distance of 38.74 feet;

***THENCE*** with the South line of said City of Miamisburg lands, ***North 65° 36' 29"*** ***East***  
***for a distance of 770.61 feet BACK TO THE TRUE POINT OF BEGINNING.***

Said property contains 5.581 Acres more or less with 1.992 Acres more or less in Section 30 and 3.589 Acres more or less in Fractional Section 36. North based on State Plane Coordinates, Ohio South Zone taken from a survey performed by Lockwood, Jones and Beals dated 06-01-82 and referenced to Deed MF 99-852-E11: Note bearing South 25° 04' 47" East with a distance of 194.43 feet. This description is based on an actual field survey performed by HLS Surveyors and Engineers under the direct supervision of William C. LeRoy PS, Ohio Lic. No. 7664 and dated May, 2000. Subject to all Easements, Highways, Covenants and Restrictions.



*WCL* 6-05-00

William C. LeRoy PS  
Ohio Lic. No. 7664  
KY. Lic. No. 3516

JOSEPH LITVIN P.E., P.S.  
COUNTY ENGINEER  
MONTGOMERY COUNTY DAYTON, OHIO  
DESCRIPTION CHECKED AND APPROVED  
By *EAM* DATE *6/6/00*

**FRAC. TOWN 2, RANGE 5 M.R.S.  
MIAMISBURG, MONTGOMERY CO., OHIO  
PART OF CITY OF MIAMISBURG LOT NUMBER 2259  
B  
PART OF CITY OF MIAMISBURG LOT NUMBER 2290**

**5301 ACRES  
PLAT OF SURVEY  
"ROUND PARCEL 3"**  
SECTION 30 T29P 24E R14C 2E  
FRAC. TOWN 2, RANGE 5, M.R.S.  
CITY OF MIAMISBURG  
PART OF CITY OF MIAMISBURG LOT NO. 2259  
PART OF CITY OF MIAMISBURG LOT NO. 2290

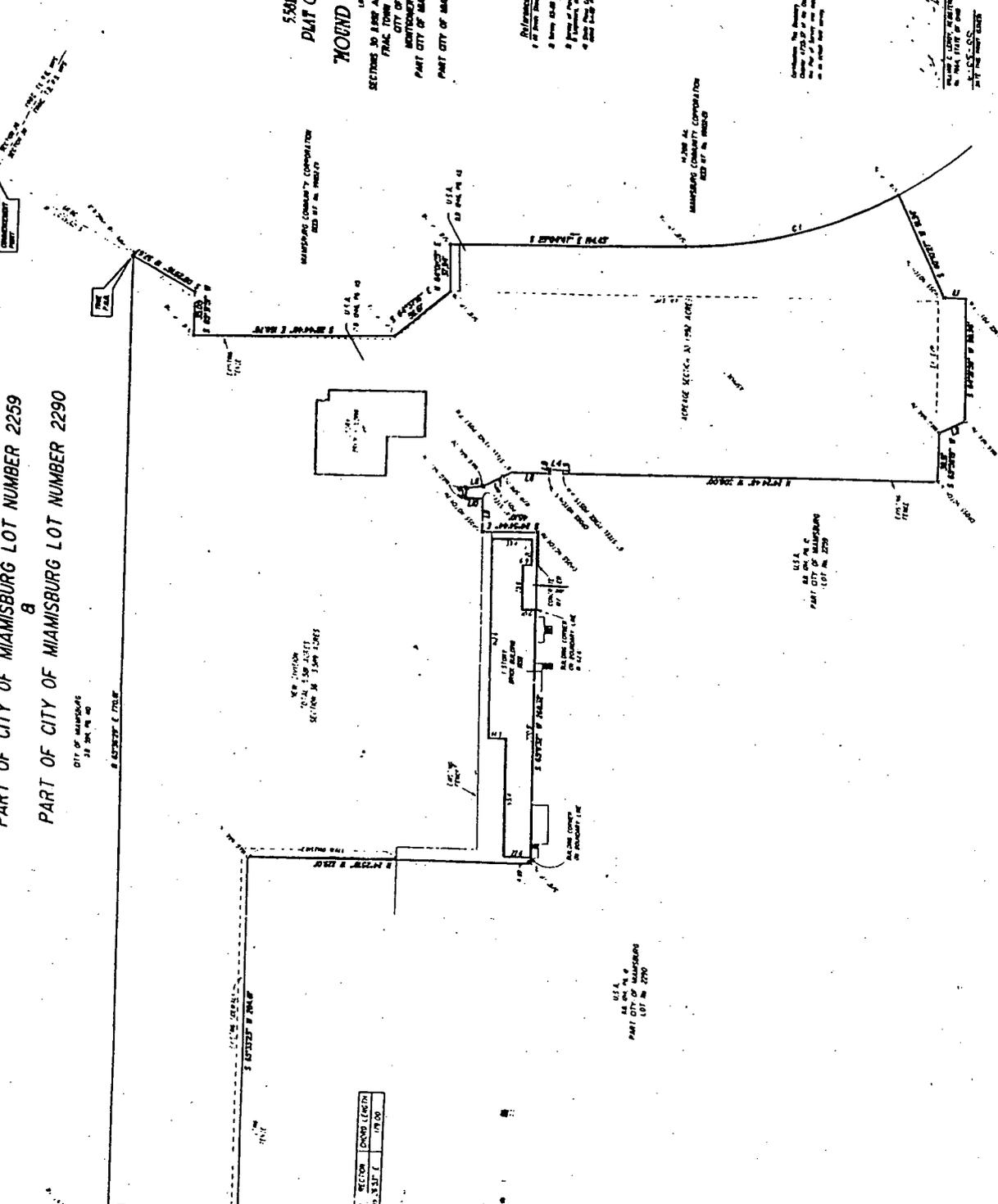
**Reference Documents**  
1. As shown on map of Survey  
2. Survey 62-48  
3. Plat of Round Parcel 3, S.S. 11/27/1911  
4. Plat of Round Parcel 3, S.S. 11/27/1911



Having the above described plat and survey, and the same being correct and true, I have caused this plat to be recorded in the office of the Recorder of Deeds for the County of Montgomery, Ohio, on this 11th day of November, 1911.

**J. C. S. S.**  
Recorder of Deeds

RECORDED IN 1118  
MONTGOMERY COUNTY, OHIO  
NOV 27 1911



**CURVE TABLE**

CHORD	LENGTH	DELTA	ANGLE	CHORD	BEARING	CHORD	BEARING	CHORD	BEARING
1	100.00	90.00	90.00	100.00	S 90.00 W	100.00	S 90.00 W	100.00	S 90.00 W
2	100.00	90.00	90.00	100.00	S 90.00 W	100.00	S 90.00 W	100.00	S 90.00 W

**LINE TABLE**

LINE	BEARING	DISTANCE
1	S 90.00 W	100.00
2	S 90.00 W	100.00
3	S 90.00 W	100.00
4	S 90.00 W	100.00
5	S 90.00 W	100.00
6	S 90.00 W	100.00
7	S 90.00 W	100.00
8	S 90.00 W	100.00
9	S 90.00 W	100.00
10	S 90.00 W	100.00
11	S 90.00 W	100.00
12	S 90.00 W	100.00

**LEGEND**

- 1. All lines are shown as they are.
- 2. All lines are shown as they are.
- 3. All lines are shown as they are.
- 4. All lines are shown as they are.
- 5. All lines are shown as they are.
- 6. All lines are shown as they are.
- 7. All lines are shown as they are.
- 8. All lines are shown as they are.
- 9. All lines are shown as they are.
- 10. All lines are shown as they are.
- 11. All lines are shown as they are.
- 12. All lines are shown as they are.

Surveyor's Note

This plat was prepared by the Surveyor of the City of Miamisburg, Ohio, and is a true and correct copy of the original survey. It is hereby certified that the same is correct and true.

- ▶ Site access for federal and state agencies for the purpose of sampling and monitoring; and
- ▶ Prohibition against removal of Parcel 3 soils from the DOE Mound property (as owned in 1998) boundary without approval from ODH and OEPA.

## 2.10 SELECTED REMEDY

### 2.10.1 Description

The selected remedy for Parcel 3 is institutional controls in the form of deed restrictions on future land use. The specific restrictions to be adopted are provided in the deed attached to this ROD as Appendix A. The deed restrictions include:

- ▶ Maintenance of industrial/commercial land use;
- ▶ Prohibition against residential use;
- ▶ Prohibition against the use of groundwater;
- ▶ Site access for federal and state agencies for the purpose of sampling and monitoring; and
- ▶ Prohibition against removal of Parcel 3 soils from the DOE Mound property (as owned in 1998) boundary without approval from ODH and OEPA.

DOE or its successors, as the lead agency for this ROD, have the responsibility to monitor, maintain and enforce these institutional controls. This responsibility includes the duty to conduct annual assessments of compliance with the deed restrictions and the duty to enforce the deed restrictions if any non-compliance is detected. The assessment and enforcement processes is part of the Operations and Maintenance (O&M) Plan and is outlined in Appendix B, which is intended to serve as a framework for implementation of operation and maintenance activities for the selected remedy. Within 90 days of the date on which this ROD is signed, DOE shall submit to US EPA and OEPA for their approval a formal proposal regarding operation and maintenance of the institutional controls. This proposal and the annual compliance assessments shall be considered primary documents under the Federal Facilities Agreement. If DOE, US EPA, and OEPA agree, the frequency of the compliance assessments can be changed at any time.

The soils within Parcel 3 have not been evaluated for any use other than on-site industrial/commercial use. Any off-site disposition of the Parcel 3 soil without proper handling, sampling, and management could create an unacceptable risk to off-site receptors. An objective of the preferred alternative is to prevent residual exposure to soils from Parcel 3.

A copy of the deed is attached in Appendix A; this represents the remedy for Parcel 3. DOE will develop an O&M Plan for the remedy. US EPA and OEPA have approval authority for this plan.

**Parcel 4**



DIV 162  
2/21

K46-15-7-21,22

K46-11-9-7,8

QUIT CLAIM DEED

TRANSFER  
02:05pm  
OCTOBER 17, 2002  
KEITH, COUNTY AUDITOR

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel 4:

Situated in the Southwest Quarter of Section 30, Town 2, Range 5, MRs, the Southeast Quarter of Section 36, Town 2 Range 5, MRs, Northeast Quarter Section 36, Town 2, Range 5, MRs., City of Miamisburg, County of Montgomery, State of Ohio, being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01 of the Deed Records of Montgomery County, Ohio, said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 24.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, also being part of a 42.56 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-323A11 of the Deed Records of Montgomery County, Ohio, said 42.56 acre tract being comprised of a 46.313 acre tract known as Lot Numbered 4778 of the consecutive numbered lots of the City of Miamisburg, said 42.56 acre tract being all the remainder of an 80 acre tract as conveyed from Ray C. Dunaway and Thelma Mae Dunaway to Oak Knoll Development and Investment Co., Inc., as recorded in Microfiche No. 71-513B06 of the Deed Records of Montgomery County, Ohio; being a new division of 94.838 acres from said 79.74 acre and 42.56 acre tracts and being more fully described in Exhibit A attached hereto and incorporated herein.

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right to access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

1100.VV 10/17 11:16:00 AM  
DEED-02-12800. J040  
Montgomery County  
Judy Dodge Recorder

Prepared	
Cashiered	<i>[Signature]</i>
Fiche	
Coded	
Entered	
Verified	

200401

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

1.1 Excepting those soils in the area 35 feet wide and 2,354.38 feet long bounded on the south by the centerline of Benner Road as described above, Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Parcel 4, Mound Plant, Miamisburg, Ohio dated *March 21, 2001*) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

- (1) single or multifamily dwellings or rental units;
- (2) day care facilities;
- (3) schools or other educational facilities for children under eighteen years of age; and
- (4) community centers, playgrounds, or other recreational religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees; and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in

enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

**3.1 Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B", attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

**3.2 Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

**3.3 Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this 19<sup>th</sup> day of April, 2001.

UNITED STATES OF AMERICA

Jack R. Craig

WITNESSETH:

Carl B. Provencher

[Signature]

**NO PLAT REQUIRED**  
(SEC 711.131 ORC)  
**MIAMISBURG CITY PLANNING COMMISSION**  
Jessamine J. Baker  
Secretary

State of Ohio )  
County of Montgomery ) SS.

Before me, a Notary Public in and for said State and County, appeared this 19 day of April, 2001, Jack Craig, who acknowledged that she is the Deputy Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

Randolph Torney  
Notary Public  
GANDOLPH T. TORNEY, Attorney-at-Law  
Notary Public, State of Ohio  
My Commission has no expiration date.  
Section 147.03 O. R. C.

Exhibit "A"  
DESCRIPTION OF  
94.838 Acres

DIV 1,2  
7.1  
K46-15-7-21,22  
K46-11-9-7,8

located in  
Section 30, 35 and 36, Town 2, Range 5, MRs.  
City of Miamisburg, Montgomery County, Ohio

Situate in the Southwest Quarter of Section 30, Town 2, Range 5, MRs., the Southeast Quarter of Section 36, Town 2, Range 5, MRs., Northeast Quarter Section 36, Town 2, Range 5, MRs., City of Miamisburg, County of Montgomery, State of Ohio, *being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01* of the Deed Records of Montgomery County, Ohio, said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 24.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, *also being part of a 42.56 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-323A11* of the Deed Records of Montgomery County, Ohio, said 42.56 acre tract being comprised of a 46.313 acre tract known as Lot Numbered 4778 of the consecutive numbered lots of the City of Miamisburg, said 42.56 acre tract being all the remainder of an 80 acre tract as conveyed from Ray C. Dunaway and Thelma Mae Dunaway to Oak Knoll Development and Investment Co., Inc., as recorded in Microfiche No. 71-513B06 of the Deed Records of Montgomery County, Ohio, *being a new division of 94.838 acres from said 79.74 acre and 42.56 acre tracts* and being more fully bounded and described as follows:

Commencing at a railroad spike found in concrete, said spike being the southwest corner of Section 30, the southeast corner of Section 36 and the northeast corner of Section 35, said spike lying in the center line of Benner Road at an angle point in said road, said spike also being the southwest corner of said United States of America 79.74 acre tract and the southeast corner of said United States of America 42.56 acre tract, also being the northeast corner of a 0.47 acre tract conveyed to Danny and Judith Hall, as recorded in Microfiche No. 88-598D12 of the Deed Records of Montgomery County, Ohio, said spike having a scale coordinate value of North 594,365.34, East 1,496,165.88 of the Ohio Plane Coordinate System, South Zone, said spike being the **True Point of Beginning** of the hereinafter described 95.146 acre tract;

**Thence** with the center line of Benner Road and the northwesterly line of said Hall 0.47 acre tract, also the northwesterly line of a 0.764 acre tract conveyed to the City of Miamisburg, Ohio, as recorded in Microfiche No. 00-356C07 of the Deed Records of Montgomery County, Ohio, **South 66° 32' 34" West**, a distance of 958.76 feet to a **Mag nail set**, said Mag nail being an angle point in the center line of Benner Road;

**Thence** continuing with the center line of Benner Road and the northwesterly line of said City of Miamisburg, Ohio 0.764 acre tract, **South 73° 18' 03" West**, a distance of 31.01 feet to a **Mag nail set**, said Mag nail being the southwest corner of said United States of America 42.56 acre tract, said Mag nail also lying in the northeasterly line of the abandoned Miami & Erie canal lands, said lands being a 1.448 acre tract conveyed to the Miami Conservancy District, as recorded in Deed Book Volume 2450, Page 190 of the Deed Records of Montgomery County, Ohio, said Miami Conservancy

District 1.448 acre tract also being known as Lot Numbered 4782 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the southwesterly line of said United States of America 42.56 acre tract and the northeasterly line of said Miami Conservancy District 1.448 acre tract on the following three (3) courses,

- 1) North 14° 05' 40" West, a distance of 62.17 feet to an axle found, said axle being an angle point in said line;
- 2) Thence, North 14° 12' 04" West, a distance of 440.84 feet to an axle found, said axle lying in the north line of the Northeast Quarter of Section 35 and the south line of the Southeast Quarter of Section 36, said axle also being an angle point in said line;
- 3) Thence, North 14° 47' 54" West, a distance of 259.69 feet to an axle found, said axle being the northeasterly corner of said Miami Conservancy District 1.448 acre tract, said axle also being the southeasterly corner of lands conveyed to the Miami Conservancy District, as recorded in Deed Book Volume 2450, Page 194 of the Deed Records of Montgomery County, Ohio, said lands also being known as Lot Numbered 4781 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the southwesterly line of said United States of America 42.56 acre tract and the northeasterly line of said Miami Conservancy District lands, North 14° 45' 30" West, a distance of 546.20 feet to a 5/8" iron pin set, said iron pin being the southwesterly corner of a 5.481 acre tract conveyed to the Consolidated Railroad Corporation, as recorded in Microfiche No. 78-502A01 of the Deed Records of Montgomery County, Ohio, said Consolidated Railroad Corporation 5.481 acre tract also known as Lot Numbered 4780 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the southerly line of said Consolidated Railroad Corporation 5.481 acre tract on the following three (3) courses,

- 1) North 74° 56' 41" East, a distance of 85.24 feet to a 1" iron pipe found, said pipe being an angle point in said line;
- 2) Thence, North 37° 22' 23" East, a distance of 96.59 feet to a 5/8" iron pin found, said iron pin being an angle point in said line;
- 3) Thence, North 80° 25' 45" East, a distance of 65.98 feet to a 1" iron pipe found, said iron pipe being the southeasterly corner of said Consolidated Railroad Corporation 5.481 acre tract;

Thence with the northeasterly line of said Consolidated Railroad Corporation 5.481 acre tract, North 09° 33' 38" West, a distance of 147.88 feet to a 5/8" iron pin set, said iron pin being the northwesterly corner of the herein described new division of 95.146 acres;

Thence with a new division line on the following nine (9) courses,

- 1) Due East, a distance of 72.92 feet to a 5/8" iron pin set;
- 2) Thence, Due North, a distance of 82.40 feet to a 5/8" iron pin set;
- 3) Thence, North 79° 34' 35" East, a distance of 878.75 feet to a 5/8" iron pin set;
- 4) Thence, North 10° 55' 31" West, a distance of 75.93 feet to a 5/8" iron pin set;
- 5) Thence, North 47° 17' 05" West, a distance of 318.93 feet to a 5/8" iron pin set;
- 6) Thence, North 23° 53' 27" East, a distance of 12.17 feet to a 5/8" iron pin set;

7) Thence, North 89° 59' 52" East, passing a point at 517.95 feet, said point lying in the east line of the Southeast Quarter of Section 36 and the west line of the Southwest Quarter of Section 30, reference a broken concrete monument found, North 05° 16' 42" East, 3724.34 feet, said concrete monument being the northeast corner of Section 36 and the northwest corner of Section 30 by common report, in all a distance of 1767.43 feet to a 5/8" iron pin set;

8) Thence, Due South, a distance of 111.18 feet to a 5/8" iron pin set;

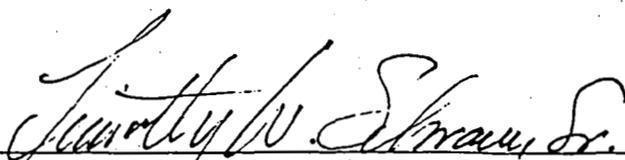
9) Thence, Due East, a distance of 62.54 feet to a 5/8" iron pin set, said iron pin lying in the east line of said United States of America 79.74 acre tract, said iron lying in the west line of a 7.502 acre tract conveyed to Daniel R. Shell, as recorded in Microfiche No. 85-443D02 of the Deed Records of Montgomery County, Ohio, said Shell 7.502 acre tract also being known as Lot Numbered 6130 of the consecutive numbered lots of the City of Miamisburg, Ohio, witness a concrete Department of Defense monument found, North 04° 42' 45" East, 311.82 feet, said monument being the northeast corner of said United States of America 79.74 acre tract;

Thence with the east line of said United States of America 79.74 acre tract and the west line of said Shell 7.502 acre tract, also the west line of a 8.850 acre tract conveyed to Frank C. Dickinson, as recorded in Microfiche No. 93-516A05 of the Deed Records of Montgomery County, Ohio, South 04° 42' 45" West, passing a 1" pinched top pipe found at 737.06 feet, said pipe lying 1.49 feet east of the line, said pipe being the common corner of said Shell 7.502 acre tract and Dickinson 8.850 acre tract, in all a distance of 1698.01 feet to a railroad spike in concrete found, said spike lying in the south line of the Southwest Quarter of Section 30, said spike being the southeast corner of said United States of America 79.74 acre tract, said spike lying in the center line of Benner Road;

Thence with the south line of the Southwest Quarter of Section 30 and the center line of Benner Road, North 84° 29' 45" West, a distance of 1333.45 feet to the True Point of Beginning, containing 94.838 acres, more or less, of which 52.932 acres lying in the Southwest Quarter of Section 30, 36.224 acres lying in the Southeast Quarter of Section 36 and 5.682 acres lying in the Northeast Quarter of Section 35 and being subject to all easements, highways and right of ways of record..

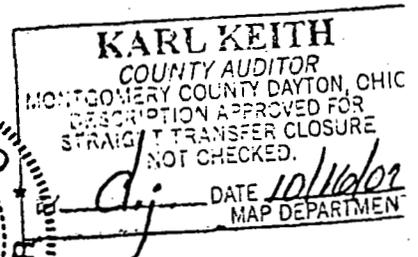
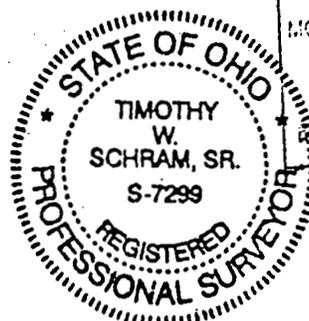
Bearing basis established on State Plane Coordinates South Zone, State of Ohio, per prior survey by Lockwood, Jones and Beals, dated; June 1<sup>st</sup>, 1982, said survey filed in the Montgomery County Engineer's Record of Land Surveys as survey reference number SUR-83-88.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number \_\_\_\_\_.



Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299 of the State of Ohio, August 21, 2000.

F: 2001/01018/01018a.des



**APPENDIX A**

---

---

**Quit Claim Deed for Parcel 4**

## QUIT CLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel 4:

Situated in the Southwest Quarter of Section 30, Town 2, Range 5, MRs, the Southeast Quarter of Section 36, Town 2 Range 5, MRs, Northeast Quarter Section 36, Town 2, Range 5, MRs., City of Miamisburg, County of Montgomery, State of Ohio, being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01 of the Deed Records of Montgomery County, Ohio, said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 24.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, also being part of a 42.56 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-323A11 of the Deed Records of Montgomery County, Ohio, said 42.56 acre tract being comprised of a 46.313 acre tract known as Lot Numbered 4778 of the consecutive numbered lots of the City of Miamisburg, said 42.56 acre tract being all the remainder of an 80 acre tract as conveyed from Ray C. Dunaway and Thelma Mae Dunaway to Oak Knoll Development and Investment Co., Inc., as recorded in Microfiche No. 71-513B06 of the Deed Records of Montgomery County, Ohio, being a new division of 94.838 acres from said 79.74 acre and 42.56 acre tracts and being more fully described in Exhibit A attached hereto and incorporated herein.

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right to access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

1.1 Excepting those soils in the area 35 feet wide and 2,354.38 feet long bounded on the south by the centerline of Benner Road as described above, Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Parcel 4, Mound Plant, Miamisburg, Ohio dated \_\_\_\_\_) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

- (1) single or multifamily dwellings or rental units;
- (2) day care facilities;
- (3) schools or other educational facilities for children under eighteen years of age; and
- (4) community centers, playgrounds, or other recreational religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in

enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

**3.1 Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B", attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

**3.2 Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

**3.3 Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this \_\_\_\_\_ day of \_\_\_\_\_, 2001.

UNITED STATES OF AMERICA

\_\_\_\_\_

WITNESSETH:

\_\_\_\_\_

\_\_\_\_\_

State of Ohio                    )  
County of Montgomery    ) SS.

Before me, a Notary Public in and for said State and County, appeared this \_\_\_\_ day of \_\_\_\_\_, 2001, \_\_\_\_\_, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

\_\_\_\_\_  
Notary Public

**APPENDIX A, Exhibit A**

---

---

**Legal Description of Parcel 4**

**Exhibit "A"**  
**DESCRIPTION OF**  
**94.838 Acres**

located in  
**Section 30, 35 and 36, Town 2, Range 5, MRs.**  
**City of Miamisburg, Montgomery County, Ohio**

Situate in the Southwest Quarter of Section 30, Town 2, Range 5, MRs., the Southeast Quarter of Section 36, Town 2, Range 5, MRs., Northeast Quarter Section 36, Town 2, Range 5, MRs., City of Miamisburg, County of Montgomery, State of Ohio, *being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01* of the Deed Records of Montgomery County, Ohio, said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 4.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, *also being part of a 42.56 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-323A11* of the Deed Records of Montgomery County, Ohio, said 42.56 acre tract being comprised of a 46.313 acre tract known as Lot Numbered 4778 of the consecutive numbered lots of the City of Miamisburg, said 42.56 acre tract being all the remainder of an 80 acre tract as conveyed from Ray C. Dunaway and Thelma Mae Dunaway to Oak Knoll Development and Investment Co., Inc., as recorded in Microfiche No. 71-513B06 of the Deed Records of Montgomery County, Ohio, *being a new division of 94.838 acres from said 79.74 acre and 42.56 acre tracts* and being more fully bounded and described as follows:

**Commencing** at a railroad spike found in concrete, said spike being the southwest corner of Section 30, the southeast corner of Section 36 and the northeast corner of Section 35, said spike lying on the center line of Benner Road at an angle point in said road, said spike also being the southwest corner of said United States of America 79.74 acre tract and the southeast corner of said United States of America 42.56 acre tract, also being the northeast corner of a 0.47 acre tract conveyed to Danny and Judith Hall, as recorded in Microfiche No. 88-598D12 of the Deed Records of Montgomery County, Ohio, said spike having a scale coordinate value of North 594,365.34, East 1,496,165.88 of the Ohio Plane Coordinate System, South Zone, said spike being the **True Point of Beginning** of the hereinafter described 95.146 acre tract;

**Thence** with the center line of Benner Road and the northwesterly line of said Hall 0.47 acre tract, also the northwesterly line of a 0.764 acre tract conveyed to the City of Miamisburg, Ohio, as recorded in Microfiche No. 00-356C07 of the Deed Records of Montgomery County, Ohio, **South 66° 07' 34" West**, a distance of **958.76 feet** to a **Mag nail set**, said Mag nail being an angle point in the center line of Benner Road;

**Thence** continuing with the center line of Benner Road and the northwesterly line of said City of Miamisburg, Ohio 0.764 acre tract, **South 73° 18' 03" West**, a distance of **31.01 feet** to a **Mag nail set**, said Mag nail being the southwest corner of said United States of America 42.56 acre tract, said Mag nail also lying in the northeasterly line of the abandoned Miami & Erie canal lands, said lands being a 1.448 acre tract conveyed to the Miami Conservancy District, as recorded in Deed Book Volume 2450, Page 190 of the Deed Records of Montgomery County, Ohio, said Miami Conservancy

District 1.448 acre tract also being known as Lot Numbered 4782 of the consecutive numbered lots of the City of Miamisburg, Ohio;

**Thence** with the southwesterly line of said United States of America 42.56 acre tract and the northeasterly line of said Miami Conservancy District 1.448 acre tract on the following three (3) courses,

- 1) **North 14° 05' 40" West**, a distance of **62.17 feet** to an **axle found**, said axle being an angle point in said line;
- 2) **Thence, North 14° 12' 04" West**, a distance of **440.84 feet** to an **axle found**, said axle being the north line of the Northeast Quarter of Section 35 and the south line of the Southeast Quarter of Section 36, said axle also being an angle point in said line;
- 3) **Thence, North 14° 47' 54" West**, a distance of **259.69 feet** to an **axle found**, said axle being the northeasterly corner of said Miami Conservancy District 1.448 acre tract, said axle also being the southeasterly corner of lands conveyed to the Miami Conservancy District, as recorded in Deed Book Volume 2450, Page 194 of the Deed Records of Montgomery County, Ohio, said lands also being known as Lot Numbered 4781 of the consecutive numbered lots of the City of Miamisburg, Ohio;

**Thence** with the southwesterly line of said United States of America 42.56 acre tract and the northeasterly line of said Miami Conservancy District lands, **North 14° 45' 30" West**, a distance of **546.20 feet** to a **5/8" iron pin set**, said iron pin being the southwesterly corner of a 5.481 acre tract conveyed to the Consolidated Railroad Corporation, as recorded in Microfiche No. 78-502A01 of the Deed Records of Montgomery County, Ohio, said Consolidated Railroad Corporation 5.481 acre tract also known as Lot Numbered 4780 of the consecutive numbered lots of the City of Miamisburg, Ohio;

**Thence** with the southerly line of said Consolidated Railroad Corporation 5.481 acre tract on the following three (3) courses,

- 1) **North 74° 56' 41" East**, a distance of **85.24 feet** to a **1" iron pipe found**, said pipe being an angle point in said line;
- 2) **Thence, North 37° 22' 23" East**, a distance of **96.59 feet** to a **5/8" iron pin found**, said pin being an angle point in said line;
- 3) **Thence, North 80° 25' 45" East**, a distance of **65.98 feet** to a **1" iron pipe found**, said pipe being the southeasterly corner of said Consolidated Railroad Corporation 5.481 acre tract;

**Thence** with the northeasterly line of said Consolidated Railroad Corporation 5.481 acre tract and the **North 09° 33' 38" West**, a distance of **147.88 feet** to a **5/8" iron pin set**, said iron pin being the northwesterly corner of the herein described new division of 95.146 acres;

**Thence** with a new division line on the following nine (9) courses,

- 1) **Due East**, a distance of **72.92 feet** to a **5/8" iron pin set**;
- 2) **Thence, Due North**, a distance of **82.40 feet** to a **5/8" iron pin set**;
- 3) **Thence, North 79° 34' 35" East**, a distance of **878.75 feet** to a **5/8" iron pin set**;
- 4) **Thence, North 10° 55' 31" West**, a distance of **75.93 feet** to a **5/8" iron pin set**;
- 5) **Thence, North 47° 17' 05" West**, a distance of **318.93 feet** to a **5/8" iron pin set**;
- 6) **Thence, North 23° 53' 27" East**, a distance of **12.17 feet** to a **5/8" iron pin set**;

7) **Thence, North 89° 59' 52" East**, passing a point at 517.95 feet, said point lying in the east line of the Southeast Quarter of Section 36 and the west line of the Southwest Quarter of Section 30, reference a broken concrete monument found, North 05° 16' 42" East, 3724.34 feet, said concrete monument being the northeast corner of Section 36 and the northwest corner of Section 30 by common report. in all a distance of **1767.43 feet to a 5/8" iron pin set**;

8) **Thence, Due South**, a distance of **111.18 feet to a 5/8" iron pin set**;

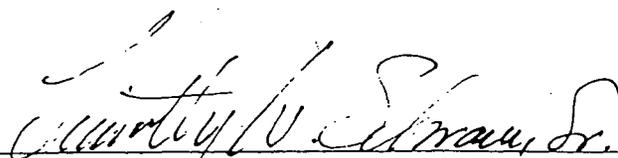
9) **Thence, Due East**, a distance of **62.54 feet to a 5/8" iron pin set**, said iron pin lying in the east line of said United States of America 79.74 acre tract, said iron lying in the west line of a 7.502 acre tract conveyed to Daniel R. Shell, as recorded in Microfiche No. 85-443D02 of the Deed Records of Montgomery County, Ohio, said Shell 7.502 acre tract also being known as Lot Numbered 6130 of the consecutive numbered lots of the City of Miamisburg, Ohio, witness a concrete Department of Defense monument found, North 04° 42' 45" East, 311.82 feet, said monument being the northeast corner of said United States of America 79.74 acre tract;

**Thence** with the east line of said United States of America 79.74 acre tract and the west line of said Shell 7.502 acre tract, also the west line of a 8.850 acre tract conveyed to Frank C. Dickinson, as recorded in Microfiche No. 93-516A05 of the Deed Records of Montgomery County, Ohio, **South 04° 42' 45" West**, passing a 1" pinched top pipe found at 737.06 feet, said pipe lying 1.49 feet east of the line, said pipe being the common corner of said Shell 7.502 acre tract and Dickinson 8.850 acre tract, in all a distance of **1698.01 feet to a railroad spike in concrete found**, said spike lying in the south line of the Southwest Quarter of Section 30, said spike being the southeast corner of said United States of America 79.74 acre tract, said spike lying in the center line of Benner Road;

**Thence** with the south line of the Southwest Quarter of Section 30 and the center line of Benner Road, **North 84° 29' 45" West**, a distance of **1333.45 feet to the True Point of Beginning**, containing **94.838 acres**, more or less, of which **52.932 acres lying in the Southwest Quarter of Section 30, 36.224 acres lying in the Southeast Quarter of Section 36 and 5.682 acres lying in the Northeast Quarter of Section 35** and being subject to all easements, highways and right of ways of record..

Bearing basis established on State Plane Coordinates South Zone, State of Ohio, per prior survey by Lockwood, Jones and Beals, dated; June 1<sup>st</sup>, 1982, said survey filed in the Montgomery County Engineer's Record of Land Surveys as survey reference number SUR-83-88.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number \_\_\_\_\_

  
Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299  
of the State of Ohio, August 21, 2000.



DAYTON - CINCINNATI PIKE  
AKA SOUTH DIXIE DRIVE

BANNER  
ROAD

ROAD  
(140' R.W.)

MARK



94,838 ACRES  
PLAT NO. 100-1-1  
SECTION 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

111  
SECTION 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

## 2.9 DESCRIPTION OF ALTERNATIVES

In light of the planned exit of DOE from the site, and the residual levels of contaminants in the soil and groundwater in Parcel 4, a remedy must be implemented to protect human health and the environment into the future. Two alternatives were considered for Parcel 4; they are described below.

### 2.9.1 No Action

Regulations governing the Superfund program require that the "no action" alternative be evaluated at each site to establish a baseline for comparison. Under this alternative, DOE would take no action to prevent exposure to soil and groundwater contamination associated with Parcel 4.

### 2.9.2 Institutional Controls

In this alternative, institutional controls in the form of deed restrictions on future land use would be placed on Parcel 4. The objective of these institutional controls would be to prevent an unacceptable risk to human health and the environment by restricting the use of Parcel 4, including Parcel 4 soils, to that which is consistent with assumptions in the Parcel 4 RRE. DOE or its successors would retain the right and responsibility to monitor, maintain, and enforce these institutional controls. In order to maintain protection for human health and the environment at Parcel 4 in the future, the institutional controls to be adopted would ensure:

- ▶ Maintenance of industrial/commercial land use;
- ▶ Prohibition against residential use;
- ▶ Prohibition against the use of groundwater;
- ▶ Site access for federal and state agencies for the purpose of sampling and monitoring; and
- ▶ Prohibition against removal of Parcel 4 soils from the DOE Mound property (as owned in 1998) boundary without approval from ODH and OEPA.

## 2.10 SELECTED REMEDY

### 2.10.1 Description

The selected remedy for Parcel 4 is institutional controls in the form of deed restrictions on future land use. The specific restrictions to be adopted are provided in the deed attached to this ROD as Appendix A. The deed restrictions include:

- ▶ Maintenance of industrial/commercial land use;
- ▶ Prohibition against residential use;
- ▶ Prohibition against the use of groundwater;

**DECLARATION OF EASEMENT**

THIS DECLARATION OF EASEMENT ("Declaration") is made on this 18<sup>th</sup> day of March, 2003, by MIAMISBURG MOUND COMMUNITY IMPROVEMENT CORPORATION, an Ohio non-profit corporation ("Declarant"), under the terms and conditions set forth below.

**RECITALS:**

A. By virtue of a Deed dated April 19, 2001, and recorded at Instrument No. 02-128007 of the Montgomery County, Ohio Recorder's office, The United States of America, acting by and through the Department of Energy ("DOE"), conveyed to Declarant the real property described on Exhibit A, attached hereto and incorporated herein by reference ("Declarant's Property").

B. Declarant desires to create, on the terms and conditions set forth herein, a permanent, non-exclusive easement for utility purposes, together with the right to construct, install, operate, maintain, repair, replace and/or remove any lines and all related equipment and appurtenances thereto that are necessary for the supply of gas, water, electrical power, sewage and waste disposal, drainage, telephone and communication utilities on, over and across a portion of the Declarant's Property, as identified herein.

NOW, THEREFORE, in consideration of the recitals set forth above and the terms and conditions set forth below, Declarant hereby declares as follows:

1. **PROVISIONS OF EASEMENT GRANTED** - Declarant hereby grants to utility providers, their successors and assigns, a permanent, non-exclusive easement upon, over and under the area of the Declarant's Property described in Exhibit B, attached hereto and incorporated herein (the "Easement Area"), for the purpose of constructing, installing, maintaining, operating, repairing, and/or replacing utility lines and all related equipment and appurtenances thereto that are necessary for the supply of gas, water, electrical power, sewage and waste disposal, drainage, telephone and communication utilities (such lines, equipment and appurtenances are collectively referred to as the "Equipment"). Declarant further grants to such utility providers, their successors and assigns, a permanent, non-exclusive ingress and egress easement over the Easement Area and such other portions of the Declarant's Property as reasonably necessary for the purpose of constructing, installing, maintaining, operating, repairing and/or replacing their Equipment. Notwithstanding anything to the contrary provided in this Declaration or in the exhibits attached hereto, in no event shall the grant of this easement include any area that includes or is bounded by any perimeter security fence on the Declarant's Property as it exists as of the date of this Declaration. In addition, the use of this easement shall not preclude the use by other utility providers of the area included within the Easement Area. All utility providers making use of the Easement Area shall be deemed to have agreed to be bound by the terms and conditions of this Declaration.

2. **INSTALLATION OF EQUIPMENT** - All utility providers making use of the Easement Area shall undertake, at their sole expense, the construction, installation, maintenance, operation, repair and/or replacement of their Equipment, and such work shall be accomplished in such a manner so as not to conflict with Declarant's rights or obligations, endanger Declarant's personnel or property or the personnel or property of other occupants of the Declarant's

Property, or disturb or interfere with the Equipment of other utility providers or any perimeter security fence on or around the Declarant's Property.

**3. PROTECTION OF PROPERTY** – Any and all construction, installation, repair, maintenance or other activity undertaken by or at the direction of utility providers on or to the Equipment and/or the Easement Area shall be conducted in a manner that reasonably minimizes the impact on the Declarant's Property and the Equipment of other utility providers. Utility providers shall undertake all actions reasonably necessary to restore the affected areas to the same condition as existed prior to such activities, including without limitation, sowing grass seed, covering affected areas with straw and returning affected areas to their prior levels as nearly as possible.

**4. COMPLIANCE WITH RESTRICTIONS** – All utility providers making use of the Easement Area shall have reviewed the restrictions and covenants set forth in the Deed by which DOE conveyed to Declarant the Declarant's Property prior to the construction or installation of any of their Equipment. Each utility provider agrees that, as set forth in the Deed, its use of the Easement Area is subject to the terms thereof, and further agrees to be bound to comply with the restrictions and covenants set forth therein, including without limitation, the following:

4.1 Excepting those soils in the area 35 feet wide and 2,354.38 feet long bounded on the south by the centerline of Benner Road as described above, each utility provider covenants that any soil from the Declarant's Property shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Parcel 4, Mound Plant, Miamisburg, Ohio dated March 21, 2001) without prior written approval from the Ohio Department of Health (ODH), or a successor agency. Each utility provider warrants that it will make its officers, agents, contractors, employees, and others for whom it is responsible aware of the restriction on soil removal and contractually obligate agents and contractors to abide by this restriction.

4.2 Each utility provider covenants not to use, or allow the use of, the Declarant's Property for any residential or farming activities, or any other activities that could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Declarant's Property. Restricted uses shall include, but not be limited to:

- (1) single or multifamily dwellings or rental units;
- (2) day care facilities;
- (3) schools or other educational facilities for children under eighteen years of age; and
- (4) community centers, playgrounds, or other recreational religious facilities for children under eighteen years of age.

Declarant shall be contacted to resolve any questions that may arise as to whether a particular activity would be considered a restricted use.

4.3 Each utility provider covenants not to extract, consume, expose, or use in any way the groundwater underlying the Declarant's Property without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

If there is any conflict between the terms of the Deed and this Declaration, the terms of the Deed shall control.

5. ENVIRONMENT – In constructing, installing, maintaining, operating, using, repairing and/or replacing the Equipment, utility providers shall not unlawfully pollute the air, soil or water or create a public nuisance and shall use all reasonable means available to protect the environment and natural resources from damage arising from this easement or activities incident to it and, where damage nonetheless occurs, utility providers shall be liable to restore the environment and damaged natural resources. Utility providers shall promptly comply, at their sole expense, with present and future federal, state, and local laws, ordinances, regulations, or instructions controlling the quality of the environment; provided, however, that the foregoing does not affect the provider's right to contest their validity or enjoin their applicability. If a utility provider discovers contamination on Declarant's Property, it shall immediately cease all activities on the Declarant's Property and notify Declarant.

6. LAWS, ORDINANCES, REGULATIONS – All utility providers making use of the Easement Area shall comply with all applicable federal, state and local laws, statutes, ordinances, regulations, orders and directives with regard to the construction, installation, operation, maintenance, repair and replacement of the Equipment, and obtain all licenses or permits required in connection therewith. Such providers shall also comply with such rules and regulations regarding security, ingress, egress, safety, and other matters as may be prescribed from time to time by the Declarant.

7. DECLARANT'S RESERVATIONS – Declarant reserves to itself, its successors and assigns forever, the right to use the Easement Area in any manner not inconsistent with the rights granted in this Declaration, including without limitation, the right to use any portion of the Declarant's Property situated on, over and/or under the Easement Area for the construction, installation, operation, maintenance, repair and/or replacement of electric transmission lines, water lines, utility lines, sewer lines, and other facilities.

8. THIRD-PARTY RESERVATIONS – This easement is granted subject to such other rights that may be outstanding in third parties in, on, over and/or across the Easement Area, including without limitation, the rights of third parties as set forth in the Deed by which DOE conveyed to Declarant the Declarant's Property.

9. INDEMNITY – Declarant shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the construction, installation, operation, maintenance, use, repair and/or replacement of the Equipment, including without limitation, damages to the property of utility providers making use of this easement, or for damages to the property or injuries to the persons of such providers' officers, agents, servants, employees, or others who may be on the Declarant's Property at their invitation or the invitation of any one of them. All utility providers making use of the Easement Area shall indemnify and hold harmless Declarant, its successors and assigns forever, from and against any and all actions, causes of action, lawsuits, judgments or other damages or liabilities, losses, costs or expenses resulting

from or arising in connection with, either directly or indirectly, the construction, installation, maintenance, operation, use, repair, or replacement or other activity undertaken by such providers on or to their respective Equipment and/or the Easement Area.

10. **BOUNDARY OR SURVEY MONUMENTATION** – Utility providers shall not disturb, obliterate or destroy any land boundary or survey monument on the Declarant's Property without Declarant's prior written approval.

11. **PLANS AND SPECIFICATIONS** – All utility providers desiring to make use of the Easement Area shall submit plans and specifications of proposed construction and installation of Equipment to the Declarant and obtain Declarant's written approval prior to ordering of materials or commencement of construction or installation.

12. **REMOVAL/RELOCATION OF EQUIPMENT** – If all or any portion of the Easement Area shall be needed by Declarant, utility providers shall remove their respective Equipment and appurtenant improvements, upon notice to do so, to such other location(s) as mutually agreed upon by the provider and Declarant. Declarant will pay any relocation costs.

13. **UTILITY PROVIDER PERFORMANCE** – The failure of the Declarant to insist in any one or more instances upon strict performance of any of the terms, covenants, or conditions of this Declaration shall not be construed as a waiver or relinquishment of the Declarant's right to the future performance of any such terms, covenants, or conditions, and a utility provider's obligation with respect to any such future performance shall continue in full force and effect.

14. **DECLARANT'S LIMITATIONS TO GRANT** – All utility providers acknowledge and understand that this instrument is effective only insofar as the rights of the Declarant in Declarant's Property are concerned and that each provider shall obtain such permission as may be necessary on account of any other existing rights, including without limitation, the rights of third parties as set forth in the Deed by which DOE conveyed to Declarant the Declarant's Property.

15. **PROVISIONS BINDING** – The conditions of this Declaration shall extend to and be binding upon and shall inure to the heirs, representatives, successors, and assigns of the utility provider.

16. **RUNS WITH THE LAND** - The easement, restrictions and covenants contained in this Declaration shall run with the land and shall be binding upon the parties and their respective successors and assigns.

17. **AMENDMENT** - No modification or amendment hereto shall be valid unless in writing and signed by the Declarant.

IN WITNESS WHEREOF, the undersigned has executed this Declaration on behalf of Declarant as of the day and year first set forth above.

DECLARANT:

MIAMISBURG MOUND COMMUNITY  
IMPROVEMENT CORPORATION,  
an Ohio non-profit corporation

By: Michael J. Graudelman

Printed Name: Michael J. Graudelman

Title: President

STATE OF Ohio, COUNTY OF Montgomery, SS:

The foregoing instrument was acknowledged before me this 18<sup>th</sup> day of March, 2003, by Michael J. Graudelman the President of Miamisburg Mound Community Improvement Corporation, an Ohio non-profit corporation, on behalf of said corporation.

Joan Wysong  
Notary Public

Joan Wysong, Notary Public  
In and for the State of Ohio  
My Commission Expires June 28, 2004

This instrument prepared by:  
Shannon L. Costello, Esq.  
Coolidge, Wall, Womsley & Lombard Co., L.P.A.  
33 West First St., Suite 600  
Dayton, OH 45402



**EXHIBIT A**

**Legal Description of the "Declarant's Property"**

**EXHIBIT "A"**  
**10' WIDE UTILITY EASEMENT**  
**0.6207 ACRES**

Situate in Section 30, Town 2, Range 5, M.Rs., Fractional Section 35, Town 2, Range 5, M.Rs., Fractional Section 36, Town 2, Range 5, M.Rs., City of Miamisburg, County of Montgomery, in the State of Ohio, being part of Lots 4778, 6127 and 6128 of the consecutive numbered lots of the City of Miamisburg, Ohio as conveyed to Miamisburg Mound Community Improvement Corporation by deed recorded in Instrument ID No. DEED-02-128007 of the Deed Records of Montgomery County, Ohio and being a 10 feet wide utility easement, said easement being more particularly described as follows:

**COMMENCING** at a found spike being the southwest corner of Section 30, the northeast corner of Fractional Section 35 and the southeast corner of Fractional Section 36, said spike also being the southeasterly corner of said Lot 4778 and the southwest corner of said Lot 6127, said spike also being at an angle point in the centerline of Benner Road (40' R/W);

thence South  $84^{\circ}28'52''$  East along the south line of said Section 30 and the centerline of said Benner Road a distance of 1,333.45 feet to a spike found at the southeast corner of said Lot 6128 and the southwest corner of Lot 6134 of the consecutive numbered lots of the City of Miamisburg, Ohio as conveyed to Frank Dickinson by deed recorded in Microfiche No. 93-516A05 of the Deed Records of Montgomery County, Ohio;

thence North  $04^{\circ}43'38''$  East along the east line of said Lot 6128 and the west line of said Lot 6134 a distance of 35.00 feet to the **TRUE POINT OF BEGINNING**;

thence North  $84^{\circ}28'52''$  West along a new division line 35 feet north of and parallel to the south line of said Section 30 and the centerline of said Benner Road a distance of 1,227.28 feet to a point of curvature;

thence continuing along a new division line in a southwesterly direction on a curve to the left with a central angle of  $28^{\circ}57'30''$ , a radius of 444.26 feet, an arc distance of 224.54 feet, the chord of which bears South  $81^{\circ}02'23''$  West a distance of 222.16 feet to a point;

thence South  $66^{\circ}33'38''$  West continuing along a new division line 35 feet northwest of and parallel to the centerline of said Benner Road a distance of 733.88 feet to an angle point;

thence North  $52^{\circ}06'35''$  West continuing along a new division line a distance of 71.74 feet to a point;

thence North  $28^{\circ}53'38''$  West continuing along a new division line a distance of 157.34 feet to a point of curvature;

thence continuing along a new division line in a northwesterly direction on a curve to the right with a central angle of  $36^{\circ}25'26''$ , a radius of 200.00 feet, an arc distance of 127.14 feet, the chord of which bears North  $10^{\circ}40'55''$  West a distance of 125.01 feet to a point of reverse curvature;

thence continuing along a new division line in a northwesterly direction on a curve to the left with a central angle of  $23^{\circ}22'22''$ , a radius of 320.00 feet, an arc distance of 130.54 feet, the chord of which bears North  $04^{\circ}09'23''$  West a distance of 129.63 feet to a point;

10' Wide Utility Easement

0.6207 Acres

(Continued)

thence North  $15^{\circ}50'34''$  West continuing along a new division line a distance of 37.83 feet to a point of curvature, said point also being on the south line of a new 10 feet wide utility easement;

thence in a northeasterly direction on a curve to the left with a central angle of  $00^{\circ}48'46''$ , a radius of 705.00 feet, an arc distance of 10.00 feet, the chord of which bears North  $73^{\circ}16'18''$  East a distance of 10.00 feet to an angle point;

thence South  $15^{\circ}50'34''$  East along a new division line a distance of 37.98 feet to a point of curvature;

thence continuing along a new division line in a southeasterly direction on a curve to the right with a central angle of  $23^{\circ}22'22''$ , a radius of 330.00 feet, an arc distance of 134.62 feet, the chord of which bears South  $04^{\circ}09'23''$  East a distance of 133.69 feet to a point of reverse curvature;

thence continuing along a new division line in a southeasterly direction on a curve to the left with a central angle of  $36^{\circ}25'26''$ , a radius of 190.00 feet, an arc distance of 118.76 feet, the chord of which bears South  $10^{\circ}40'55''$  East a distance of 118.76 feet to a point;

thence South  $28^{\circ}53'38''$  East continuing along a new division line a distance of 155.29 feet to a point;

thence South  $52^{\circ}06'35''$  East continuing along a new division line a distance of 63.76 feet to an angle point;

thence North  $66^{\circ}33'38''$  East continuing along a new division line 45 feet northwest of and parallel to the centerline of said Benner Road a distance of 727.95 feet to a point of curvature;

thence continuing along a new division line in a northeasterly direction on a curve to the right with a central angle of  $28^{\circ}57'30''$ , a radius of 454.26 feet, an arc distance of 229.59 feet, the chord of which bears North  $81^{\circ}02'23''$  East a distance of 227.16 feet to a point;

thence South  $84^{\circ}28'52''$  East continuing along a new division line 45 feet north of and parallel to the south line of said Section 30 and the centerline of said Benner Road a distance of 1,227.14 feet to a point on the east line of said Lot 6128 and the west line of said Lot 6134;

thence South  $04^{\circ}43'38''$  West along the east line of said Lot 6128 and the west line of said Lot 6134 a distance of 10.00 feet to the **TRUE POINT OF BEGINNING**. Containing 0.6207 acres more or less and subject to all legal highways, easements, and agreements of record.

Bearings are based on State Plane Coordinates South Zone, State of Ohio, Department of Energy, Miamisburg Mound Facility G.I.S.

**Prior Deed Reference**, Instrument ID No. DEED-02-128007

**EXHIBIT "A"**  
**10' WIDE UTILITY EASEMENT**  
**JANUARY 2003**

**MONTGOMERY COUNTY**  
**CITY OF MIAMISBURG**  
**TOWN 2, RANGE 5, M.Rs.**

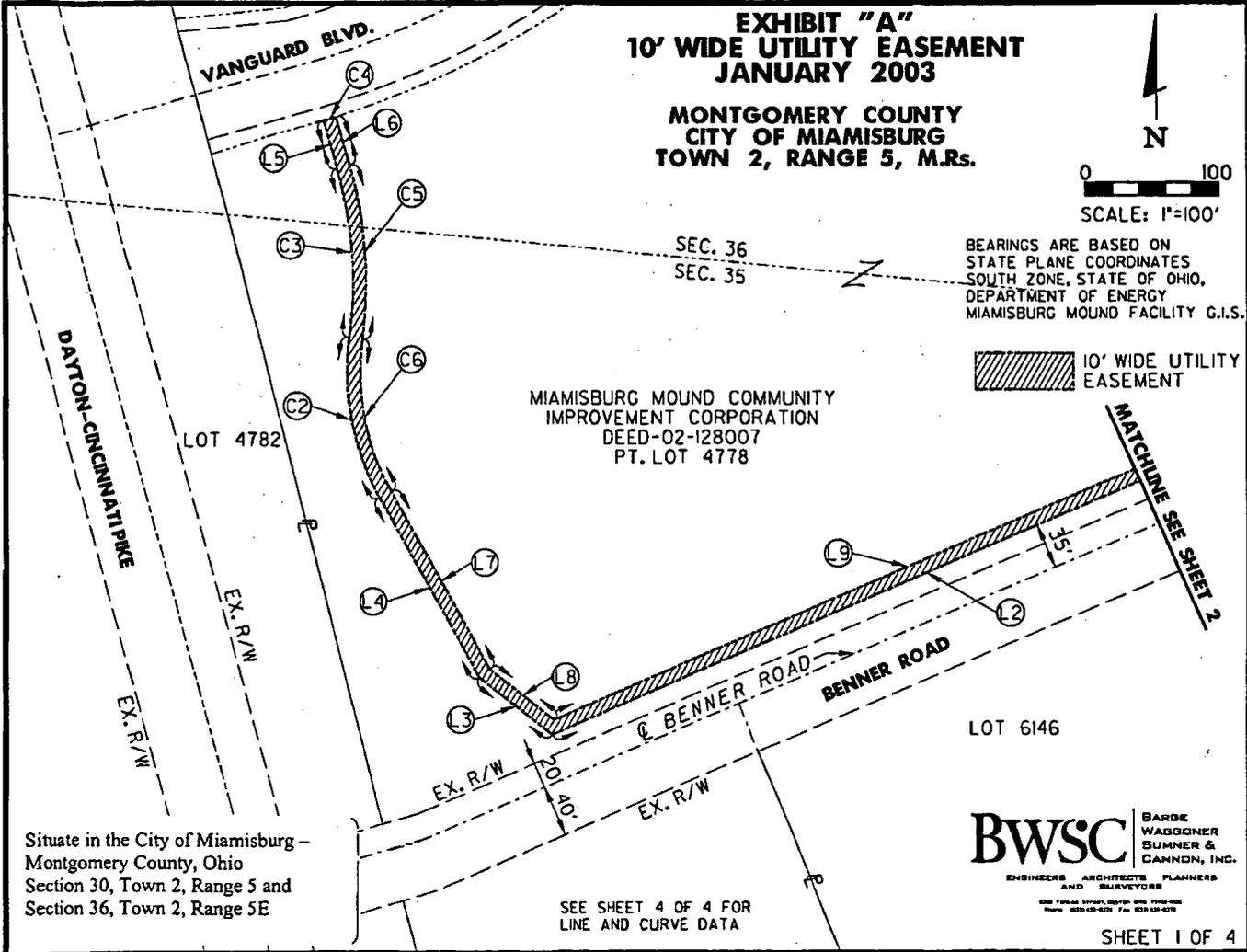


0 100  
 SCALE: 1"=100'

BEARINGS ARE BASED ON  
 STATE PLANE COORDINATES,  
 SOUTH ZONE, STATE OF OHIO,  
 DEPARTMENT OF ENERGY  
 MIAMISBURG MOUND FACILITY G.I.S.

 10' WIDE UTILITY EASEMENT

MIAMISBURG MOUND COMMUNITY  
 IMPROVEMENT CORPORATION  
 DEED-02-128007  
 PT. LOT 4778



Situate in the City of Miamisburg -  
 Montgomery County, Ohio  
 Section 30, Town 2, Range 5 and  
 Section 36, Town 2, Range 5E

SEE SHEET 4 OF 4 FOR  
 LINE AND CURVE DATA

**BWSC** BARDE  
 WAGGNER  
 SUMNER &  
 CANNON, INC.  
 ENGINEERS ARCHITECTS PLANNERS  
 AND SURVEYORS  
200 Yorkland Street, Dayton OH 45424-0202  
 Phone: 937-233-6270 Fax: 937-233-6271

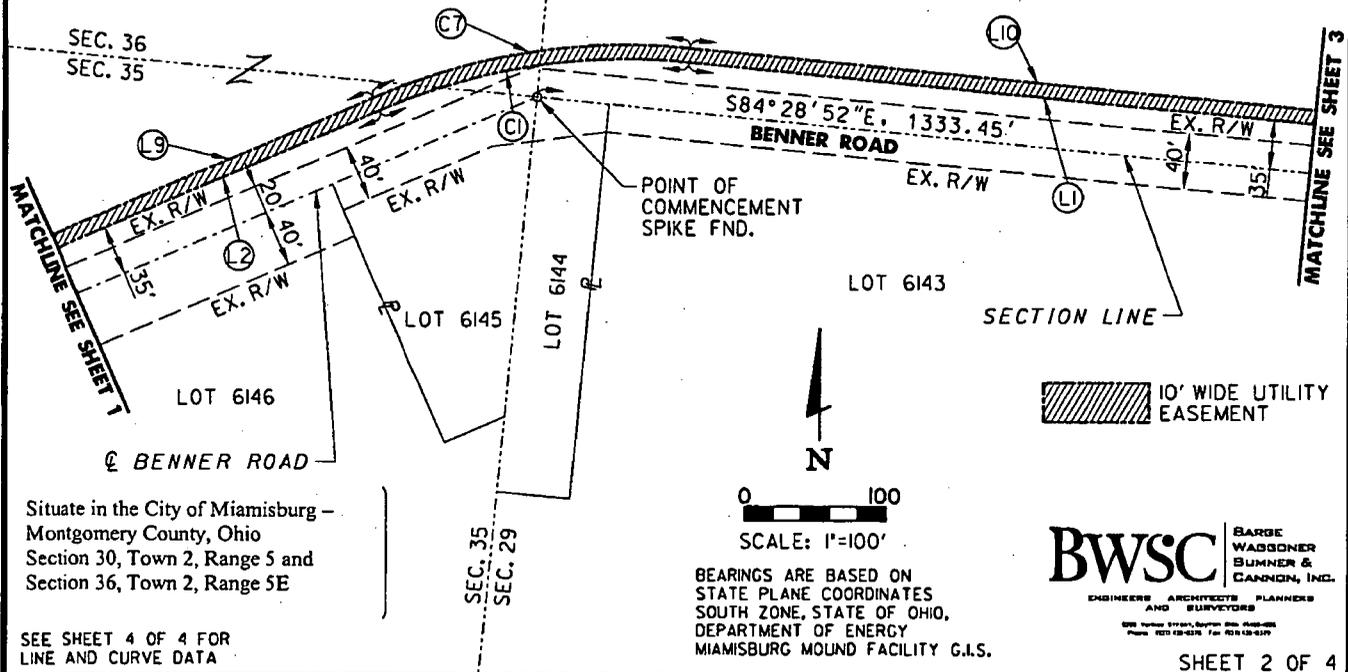
SHEET 1 OF 4

**EXHIBIT "A"**  
**10' WIDE UTILITY EASEMENT**  
**JANUARY 2003**

**MONTGOMERY COUNTY**  
**CITY OF MIAMISBURG**  
**TOWN 2, RANGE 5, M.Rs.**

MIAMISBURG MOUND COMMUNITY  
 IMPROVEMENT CORPORATION  
 DEED-02-128007  
 PT. LOT 4778

MIAMISBURG MOUND COMMUNITY  
 IMPROVEMENT CORPORATION  
 DEED-02-128007  
 PT. LOT 6127



Situate in the City of Miamisburg -  
 Montgomery County, Ohio  
 Section 30, Town 2, Range 5 and  
 Section 36, Town 2, Range 5E

SEE SHEET 4 OF 4 FOR  
 LINE AND CURVE DATA

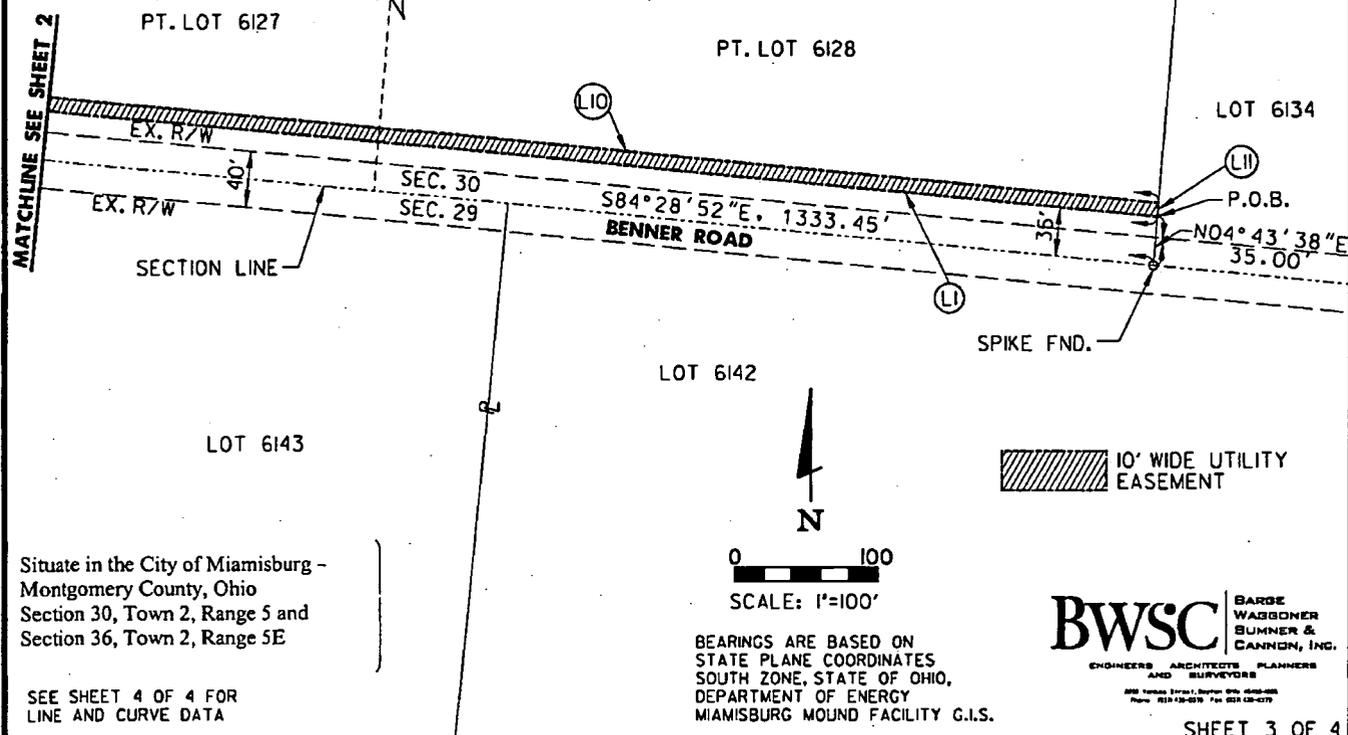
BEARINGS ARE BASED ON  
 STATE PLANE COORDINATES  
 SOUTH ZONE, STATE OF OHIO,  
 DEPARTMENT OF ENERGY  
 MIAMISBURG MOUND FACILITY G.I.S.

**BWSC** BARGE  
 WAGGONER  
 SUMNER &  
 CANNON, INC.  
 ENGINEERS ARCHITECTS PLANNERS  
 AND SURVEYORS  
228 North Street, Dayton, Ohio 45402-0202  
 Phone: 937-233-6276 Fax: 937-233-6279

**EXHIBIT "A"**  
**10' WIDE UTILITY EASEMENT**  
**JANUARY 2003**

**MONTGOMERY COUNTY**  
**CITY OF MIAMISBURG**  
**TOWN 2, RANGE 5, M.Rs.**

MIAMISBURG MOUND COMMUNITY  
IMPROVEMENT CORPORATION  
DEED-02-128007



Situate in the City of Miamisburg -  
Montgomery County, Ohio  
Section 30, Town 2, Range 5 and  
Section 36, Town 2, Range 5E

SEE SHEET 4 OF 4 FOR  
LINE AND CURVE DATA

BEARINGS ARE BASED ON  
STATE PLANE COORDINATES  
SOUTH ZONE, STATE OF OHIO,  
DEPARTMENT OF ENERGY  
MIAMISBURG MOUND FACILITY G.I.S.

**BWSC** BARDE  
WAGGONER  
SUMNER &  
CANNON, INC.  
ENGINEERS ARCHITECTS PLANNERS  
AND SURVEYORS  
All Rights Reserved. Printed 02/03/03  
Phone: 513-333-0200 Fax: 513-333-0275

**EXHIBIT "A"**  
**10' WIDE UTILITY EASEMENT**  
**JANUARY 2003**

LINE AND CURVE DATA

LINE DATA

LINE	DIRECTION	DISTANCE
1	N84°28'52"W	1227.28'
2	S66°33'38"W	733.88'
3	N52°06'35"W	71.74'
4	N28°53'38"W	157.34'
5	N15°50'34"W	37.83'
6	S15°50'34"E	37.98'
7	S28°53'38"E	155.29'
8	S52°06'35"E	63.76'
9	N66°33'38"E	727.95'
10	S84°28'52"E	1227.14'
11	S04°43'38"W	10.00'

CURVE DATA

CURVE	DELTA	RADIUS	BEARING	CHORD
1	28°57'30"	444.26'	S81°02'23"W	222.16'
2	36°25'26"	200.00'	N10°40'55"W	125.01'
3	23°22'22"	320.00'	N04°09'23"W	129.63'
4	00°48'46"	705.00'	N73°16'18"E	10.00'
5	23°22'22"	330.00'	S04°09'23"E	133.69'
6	36°25'26"	190.00'	S10°40'55"E	118.76'
7	28°57'30"	454.26'	N81°02'23"E	227.16'

Situate in the City of Miamisburg,  
 Montgomery County, Ohio  
 Section 30, Town 2, Range 5 and  
 Section 36, Town 2, Range 5E

**BWSC** | BARGE  
 WAGGONER  
 BUNNER &  
 CANNON, INC.  
 ENGINEERS ARCHITECTS PLANNERS  
 AND SURVEYORS  
698 Turner Street, Dayton, Ohio 45424  
 Phone: 937/233-2275 Fax: 937/233-2279

## **Appendix B**

### **Site Inspection Checklist**

End of current text

### Site Inspection Checklist

I. SITE INFORMATION													
<b>Site name:</b> Mound Plant Site	<b>Date of inspection:</b> February 22, 2006												
<b>Location and Region:</b> Miamisburg, OH (Region 5)	<b>EPA ID:</b> OH6890008984												
<b>Agency, office, or company leading the Five-Year Review:</b> US Department of Energy	<b>Weather/temperature:</b> Sunny – 40’s												
<b>Remedy Includes:</b> (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment  <input type="checkbox"/> Access controls  <input checked="" type="checkbox"/> Institutional controls  <input type="checkbox"/> Groundwater pump and treatment  <input type="checkbox"/> Surface water collection and treatment  <input type="checkbox"/> Other _____                 </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation  <input type="checkbox"/> Groundwater containment  <input type="checkbox"/> Vertical barrier walls                 </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls										
<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls												
<b>Attachments:</b> <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached													
II. INTERVIEWS (Check all that apply)													
<b>1. O&amp;M site manager</b> _____ <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; text-align: center;">Date</td> </tr> <tr> <td colspan="3">                     Interviewed <input type="checkbox"/> at site    <input type="checkbox"/> at office    <input type="checkbox"/> by phone    Phone no. _____                 </td> </tr> <tr> <td colspan="3">                     Problems, suggestions; <input type="checkbox"/> Report attached _____                 </td> </tr> <tr> <td colspan="3">                     _____                 </td> </tr> </table>		Name	Title	Date	Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone    Phone no. _____			Problems, suggestions; <input type="checkbox"/> Report attached _____			_____		
Name	Title	Date											
Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone    Phone no. _____													
Problems, suggestions; <input type="checkbox"/> Report attached _____													
_____													
<b>2. O&amp;M staff</b> _____ <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; text-align: center;">Date</td> </tr> <tr> <td colspan="3">                     Interviewed <input type="checkbox"/> at site    <input type="checkbox"/> at office    <input type="checkbox"/> by phone    Phone no. _____                 </td> </tr> <tr> <td colspan="3">                     Problems, suggestions; <input type="checkbox"/> Report attached _____                 </td> </tr> <tr> <td colspan="3">                     _____                 </td> </tr> </table>		Name	Title	Date	Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone    Phone no. _____			Problems, suggestions; <input type="checkbox"/> Report attached _____			_____		
Name	Title	Date											
Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone    Phone no. _____													
Problems, suggestions; <input type="checkbox"/> Report attached _____													
_____													



<p>4.</p>	<p><b>Permits and Service Agreements</b>  <input type="checkbox"/> Air discharge permit  <input type="checkbox"/> Effluent discharge  <input type="checkbox"/> Waste disposal, POTW  <input type="checkbox"/> Other permits _____                  Remarks _____</p>	<p><input type="checkbox"/> Readily available  <input type="checkbox"/> Readily available  <input type="checkbox"/> Readily available  <input type="checkbox"/> Readily available</p>	<p><input type="checkbox"/> Up to date  <input type="checkbox"/> Up to date  <input type="checkbox"/> Up to date  <input type="checkbox"/> Up to date</p>	<p><input checked="" type="checkbox"/> N/A  <input checked="" type="checkbox"/> N/A  <input checked="" type="checkbox"/> N/A  <input checked="" type="checkbox"/> N/A</p>
<p>5.</p>	<p><b>Gas Generation Records</b>                  Remarks _____</p>	<p><input type="checkbox"/> Readily available</p>	<p><input type="checkbox"/> Up to date</p>	<p><input checked="" type="checkbox"/> N/A</p>
<p>6.</p>	<p><b>Settlement Monument Records</b>                  Remarks _____</p>	<p><input type="checkbox"/> Readily available</p>	<p><input type="checkbox"/> Up to date</p>	<p><input checked="" type="checkbox"/> N/A</p>
<p>7.</p>	<p><b>Groundwater Monitoring Records</b>                  Remarks _____</p>	<p><input type="checkbox"/> Readily available</p>	<p><input type="checkbox"/> Up to date</p>	<p><input checked="" type="checkbox"/> N/A</p>
<p>8.</p>	<p><b>Leachate Extraction Records</b>                  Remarks _____</p>	<p><input type="checkbox"/> Readily available</p>	<p><input type="checkbox"/> Up to date</p>	<p><input checked="" type="checkbox"/> N/A</p>
<p>9.</p>	<p><b>Discharge Compliance Records</b>                  G Air                  G Water (effluent)                  Remarks _____</p>	<p><input type="checkbox"/> Readily available  <input type="checkbox"/> Readily available</p>	<p><input type="checkbox"/> Up to date  <input type="checkbox"/> Up to date</p>	<p><input checked="" type="checkbox"/> N/A  <input checked="" type="checkbox"/> N/A</p>
<p>10.</p>	<p><b>Daily Access/Security Logs</b>                  Remarks _____</p>	<p><input type="checkbox"/> Readily available</p>	<p><input type="checkbox"/> Up to date</p>	<p><input checked="" type="checkbox"/> N/A</p>



<b>C. Institutional Controls (ICs)</b>			
1.	<b>Implementation and enforcement</b>		
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
	Type of monitoring (e.g., self-reporting, drive by) <u>Self-reporting and walk-over surveys</u>		
	Frequency <u>Annual</u>		
	Responsible party/agency <u>US. Department of Energy</u>		
	Contact <u>Art Kleinrath</u>	<u>Project Manager</u>	<u>2006</u> <u>(937) 847-3250</u>
	Name	Title	Date Phone no.
	Reporting is up-to-date	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Reports are verified by the lead agency	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Violations have been reported	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Other problems or suggestions: <input checked="" type="checkbox"/> Report attached		
<hr/> <hr/> <hr/>			
2.	<b>Adequacy</b>	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A
	Remarks <u>Review of annual reports and results from Five-Year inspection indicates that ICs are functioning as intended</u>		
<hr/> <hr/>			
<b>D. General</b>			
1.	<b>Vandalism/trespassing</b>	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No vandalism evident
	Remarks _____		
<hr/>			
2.	<b>Land use changes on site</b>	<input checked="" type="checkbox"/> N/A	
	Remarks _____		
<hr/>			
3.	<b>Land use changes off site</b>	<input checked="" type="checkbox"/> N/A	
	Remarks _____		
<hr/>			
<b>VI. GENERAL SITE CONDITIONS</b>			
<b>A. Roads</b>			
	<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A	
1.	<b>Roads damaged</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Roads adequate <input type="checkbox"/> N/A
	Remarks _____		
<hr/>			

<b>B. Other Site Conditions</b>	
Remarks _____ _____ _____ _____ _____	
<b>VII. LANDFILL COVERS</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
<b>A. Landfill Surface</b>	
1.	<b>Settlement</b> (Low spots) <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____    Depth _____ Remarks _____ _____
2.	<b>Cracks</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident Lengths _____    Widths _____    Depths _____ Remarks _____ _____
3.	<b>Erosion</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Areal extent _____    Depth _____ Remarks _____ _____
4.	<b>Holes</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident Areal extent _____    Depth _____ Remarks _____ _____
5.	<b>Vegetative Cover</b> <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input type="checkbox"/> No signs of stress G Trees/Shrubs (indicate size and locations on a diagram) Remarks _____ _____
6.	<b>Alternative Cover (armored rock, concrete, etc.)</b> <input type="checkbox"/> N/A Remarks _____ _____
7.	<b>Bulges</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Bulges not evident Areal extent _____    Height _____ Remarks _____ _____
8.	<b>Wet Areas/Water Damage</b> <input type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Wet areas <input type="checkbox"/> Location shown on site map    Areal extent _____ <input type="checkbox"/> Ponding <input type="checkbox"/> Location shown on site map    Areal extent _____ <input type="checkbox"/> Seeps <input type="checkbox"/> Location shown on site map    Areal extent _____ <input type="checkbox"/> Soft subgrade <input type="checkbox"/> Location shown on site map    Areal extent _____ Remarks _____ _____
9.	<b>Slope Instability</b> <input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of slope instability Areal extent _____ Remarks _____ _____

<b>B. Benches</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)	
1.	<b>Flows Bypass Bench</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay Remarks _____ _____ _____
2.	<b>Bench Breached</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay Remarks _____ _____ _____
3.	<b>Bench Overtopped</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay Remarks _____ _____ _____
<b>C. Letdown Channels</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)	
1.	<b>Settlement</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of settlement Areal extent _____                    Depth _____ Remarks _____ _____ _____
2.	<b>Material Degradation</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation Material type _____                    Areal extent _____ Remarks _____ _____ _____
3.	<b>Erosion</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion Areal extent _____                    Depth _____ Remarks _____ _____ _____

4.	<b>Undercutting</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of undercutting Areal extent _____ Depth _____ Remarks _____ _____
5.	<b>Obstructions</b> Type _____ <input type="checkbox"/> No obstructions <input type="checkbox"/> Location shown on site map      Areal extent _____ Size _____ Remarks _____ _____
6.	<b>Excessive Vegetative Growth</b> Type _____ <input type="checkbox"/> No evidence of excessive growth <input type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map      Areal extent _____ Remarks _____ _____
<b>D. Cover Penetrations</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Gas Vents</b> <input type="checkbox"/> Active <input type="checkbox"/> Passive <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____
2.	<b>Gas Monitoring Probes</b> <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____
3.	<b>Monitoring Wells</b> (within surface area of landfill) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____
4.	<b>Leachate Extraction Wells</b> <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____
5.	<b>Settlement Monuments</b> <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N/A Remarks _____ _____

<b>E. Gas Collection and Treatment</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Gas Treatment Facilities</b> <input type="checkbox"/> Flaring <input type="checkbox"/> Thermal destruction <input type="checkbox"/> Collection for reuse <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
2.	<b>Gas Collection Wells, Manifolds and Piping</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	<b>Gas Monitoring Facilities</b> (e.g., gas monitoring of adjacent homes or buildings) <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____
<b>F. Cover Drainage Layer</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Outlet Pipes Inspected</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____
2.	<b>Outlet Rock Inspected</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____
<b>G. Detention/Sedimentation Ponds</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Siltation</b> Areal extent _____ Depth _____ <input type="checkbox"/> N/A <input type="checkbox"/> Siltation not evident Remarks _____ _____
2.	<b>Erosion</b> Areal extent _____ Depth _____ <input type="checkbox"/> Erosion not evident Remarks _____ _____
3.	<b>Outlet Works</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____
4.	<b>Dam</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____

<b>H. Retaining Walls</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Deformations</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Deformation not evident Horizontal displacement _____ Vertical displacement _____ Rotational displacement _____ Remarks _____ _____
2.	<b>Degradation</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Degradation not evident Remarks _____ _____
<b>I. Perimeter Ditches/Off Site Discharge</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Siltation</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Siltation not evident Areal extent _____ Depth _____ Remarks _____ _____
2.	<b>Vegetative Growth</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A <input type="checkbox"/> Vegetation does not impede flow Areal extent _____ Type _____ Remarks _____ _____
3.	<b>Erosion</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____ _____
4.	<b>Discharge Structure</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____
<b>VIII. VERTICAL BARRIER WALLS</b> <input type="checkbox"/> G Applicable <input type="checkbox"/> G N/A	
1.	<b>Settlement</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____ _____
2.	<b>Performance Monitoring</b> Type of monitoring _____ <input type="checkbox"/> Performance not monitored Frequency _____ <input type="checkbox"/> Evidence of breaching Head differential _____ Remarks _____ _____

<b>C. Treatment System</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Treatment Train</b> (Check components that apply) <input type="checkbox"/> Metals removal <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Filters _____ <input type="checkbox"/> Additive (e.g., chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually _____ <input type="checkbox"/> Quantity of surface water treated annually _____ Remarks _____ _____ _____
2.	<b>Electrical Enclosures and Panels</b> (properly rated and functional) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____
3.	<b>Tanks, Vaults, Storage Vessels</b> <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____
4.	<b>Discharge Structure and Appurtenances</b> <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____
5.	<b>Treatment Building(s)</b> <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored Remarks _____ _____ _____
6.	<b>Monitoring Wells</b> (pump and treatment remedy) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
<b>D. Monitoring Data</b>	
1.	Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining

<b>D. Monitored Natural Attenuation</b>			
1.	<b>Monitoring Wells</b> (natural attenuation remedy)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
		<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> N/A
Remarks _____			
<b>X. OTHER REMEDIES</b>			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
<b>XI. OVERALL OBSERVATIONS</b>			
<b>A. Implementation of the Remedy</b>			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).			
<u>Institutional controls have been implemented in the form of deed restrictions on future land use. A summary is prepared and included with the parcel deed that fulfills the requirements of CERCLA Section 120(h). The summary includes a discussion of the contamination that was present, the remedial actions that have taken place, and the residual risk that remains.</u>			
<u>The current land owner has implemented several measures to ensure that ICs are not violated. These include including language into the technical requirements of all Requests for Proposal and Work Orders for work being performed on transferred parcels that excavated soil is not be removed from the site.</u>			
<b>B. Adequacy of O&amp;M</b>			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.			
<u>Operation and maintenance activities are performed as outlined in the <i>Operations and Maintenance (O&amp;M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property</i>. DOE has performed annual walk-overs and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended, thus far.</u>			
<u>Future inspections will be performed as outlined in the O&amp;M Plan, which will be modified (if necessary) when the RODs for additional parcels are completed.</u>			

<p><b>C. Early Indicators of Potential Remedy Problems</b></p>
<p>Describe issues and observations such as unexpected changes in the cost or scope of O&amp;M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.</p> <p><u>Recurring use of the retention basin in Parcel 4 for fishing indicates there is potential for violation of ICs (use inconsistent with industrial/commercial land-use). Present signage does not appear to be adequate. Future structures and areas such as ponds/basins needs to be better evaluated with respect to attractiveness for inappropriate use. No issues regarding cost or scope have been identified.</u></p>
<p><b>D. Opportunities for Optimization</b></p>
<p>Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.</p> <p><u>The use of hand-held GPS units has been recommended during previous annual inspections as discussed in Section 6.5. The GPS units could enhanced the inspections by assisting in locating certain important inspection points, such as features noted in previous inspections or aerial photographs or monitoring wells.</u></p>

### Site Inspection Checklist

I. SITE INFORMATION			
<b>Site name:</b> Mound Plant Site	<b>Date of inspection:</b> July 13, 2006		
<b>Location and Region:</b> Miamisburg, OH (Region 5)	<b>EPA ID:</b> OH6890008984		
<b>Agency, office, or company leading the Five-Year Review:</b> US Department of Energy	<b>Weather/temperature:</b> Sunny – 80’s		
<b>Remedy Includes:</b> (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Landfill cover/containment  <input checked="" type="checkbox"/> Access controls  <input checked="" type="checkbox"/> Institutional controls  <input checked="" type="checkbox"/> Groundwater pump and treatment  <input checked="" type="checkbox"/> Surface water collection and treatment  <input checked="" type="checkbox"/> Other <u>SVE system</u> </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation  <input checked="" type="checkbox"/> Groundwater containment  <input type="checkbox"/> Vertical barrier walls                 </td> </tr> </table>		<input checked="" type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input checked="" type="checkbox"/> Groundwater pump and treatment <input checked="" type="checkbox"/> Surface water collection and treatment <input checked="" type="checkbox"/> Other <u>SVE system</u>	<input type="checkbox"/> Monitored natural attenuation <input checked="" type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls
<input checked="" type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input checked="" type="checkbox"/> Groundwater pump and treatment <input checked="" type="checkbox"/> Surface water collection and treatment <input checked="" type="checkbox"/> Other <u>SVE system</u>	<input type="checkbox"/> Monitored natural attenuation <input checked="" type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls		
<b>Attachments:</b> <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached			
II. INTERVIEWS (Check all that apply)			
<b>1. O&amp;M site manager</b> _____        _____        _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> <span>Name</span> <span>Title</span> <span>Date</span> </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone    Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____			
<b>2. O&amp;M staff</b> _____        _____        _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> <span>Name</span> <span>Title</span> <span>Date</span> </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone    Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____			



4.	<b>Permits and Service Agreements</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Air discharge permit	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input checked="" type="checkbox"/> Effluent discharge	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Waste disposal, POTW	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Other permits _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	Remarks <u>Effluent monitored under CERCLA ATD under NPDES (Authorization Number 11N90010*BD)</u>			
5.	<b>Gas Generation Records</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	Remarks _____			
6.	<b>Settlement Monument Records</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	Remarks _____			
7.	<b>Groundwater Monitoring Records</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	Remarks <u>Operational data difficult to gather</u>			
8.	<b>Leachate Extraction Records</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	Remarks _____			
9.	<b>Discharge Compliance Records</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input type="checkbox"/> Air	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input checked="" type="checkbox"/> Water (effluent)	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	Remarks <u>Data reported in monthly DMR reports to OEPA</u>			
10.	<b>Daily Access/Security Logs</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	Remarks _____			

IV. O&M COSTS											
1.	<p><b>O&amp;M Organization</b></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> State in-house  <input type="checkbox"/> PRP in-house  <input type="checkbox"/> Federal Facility in-house  <input type="checkbox"/> Other _____                 </div> <div style="width: 45%;"> <input type="checkbox"/> Contractor for State  <input type="checkbox"/> Contractor for PRP  <input type="checkbox"/> Contractor for Federal Facility                 </div> </div>										
2.	<p><b>O&amp;M Cost Records</b></p> <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> Funding mechanism/agreement in place Original O&M cost estimate _____ <input type="checkbox"/> Breakdown attached										
	Total annual cost by year for review period if available										
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">From _____</td> <td style="width: 15%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 15%;"></td> <td style="width: 35%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">Total cost</td> <td><input type="checkbox"/> Breakdown attached</td> </tr> </table>	From _____	To _____				Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached
From _____	To _____										
Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached							
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">From _____</td> <td style="width: 15%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 15%;"></td> <td style="width: 35%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">Total cost</td> <td><input type="checkbox"/> Breakdown attached</td> </tr> </table>	From _____	To _____				Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached
From _____	To _____										
Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached							
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">From _____</td> <td style="width: 15%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 15%;"></td> <td style="width: 35%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">Total cost</td> <td><input type="checkbox"/> Breakdown attached</td> </tr> </table>	From _____	To _____				Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached
From _____	To _____										
Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached							
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">From _____</td> <td style="width: 15%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 15%;"></td> <td style="width: 35%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">Total cost</td> <td><input type="checkbox"/> Breakdown attached</td> </tr> </table>	From _____	To _____				Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached
From _____	To _____										
Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached							
3.	<p><b>Unanticipated or Unusually High O&amp;M Costs During Review Period</b></p> Describe costs and reasons: _____ _____ _____ _____ _____										
V. ACCESS AND INSTITUTIONAL CONTROLS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A											
<b>A. Fencing</b>											
1.	<p><b>Fencing damaged</b>      <input type="checkbox"/> Location shown on site map      <input checked="" type="checkbox"/> Gates secured      <input checked="" type="checkbox"/> N/A</p> Remarks <u>Temporary fence used to limit access and demarcate landfill boundary.</u>										
<b>B. Other Access Restrictions</b>											
1.	<p><b>Signs and other security measures</b>      <input type="checkbox"/> Location shown on site map      <input checked="" type="checkbox"/> N/A</p> Remarks _____ _____										

<b>C. Institutional Controls (ICs)</b>			
1.	<b>Implementation and enforcement</b>		
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
	Type of monitoring (e.g., self-reporting, drive by) <u>Self-reporting, drive by</u>		
	Frequency <u>Weekly</u>		
	Responsible party/agency <u>S.M. Stoller</u>		
	Contact <u>Robert Ransbottom</u>	<u>Proj. Eng.</u>	<u>2006</u> <u>(937) 847-8350</u>
	Name	Title	Date Phone no.
	Reporting is up-to-date	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Reports are verified by the lead agency	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
	Violations have been reported	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached		
	_____		
	_____		
	_____		
2.	<b>Adequacy</b>	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A
	Remarks _____		
	_____		
	_____		
<b>D. General</b>			
1.	<b>Vandalism/trespassing</b>	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No vandalism evident
	Remarks _____		
	_____		
2.	<b>Land use changes on site</b>	<input checked="" type="checkbox"/> N/A	
	Remarks _____		
	_____		
3.	<b>Land use changes off site</b>	<input checked="" type="checkbox"/> N/A	
	Remarks _____		
	_____		
<b>VI. GENERAL SITE CONDITIONS</b>			
<b>A. Roads</b>	<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A	
1.	<b>Roads damaged</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Roads adequate <input type="checkbox"/> N/A
	Remarks _____		
	_____		

<b>B. Other Site Conditions</b>		
Remarks _____ _____ _____ _____ _____		
<b>VII. LANDFILL COVERS</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A		
<b>A. Landfill Surface</b>		
1.	<b>Settlement</b> (Low spots) <input type="checkbox"/> Location shown on site map Areal extent _____                      Depth _____ Remarks _____ _____	<input checked="" type="checkbox"/> Settlement not evident
2.	<b>Cracks</b> <input type="checkbox"/> Location shown on site map Lengths _____                      Widths _____                      Depths _____ Remarks _____ _____	<input checked="" type="checkbox"/> Cracking not evident
3.	<b>Erosion</b> <input type="checkbox"/> Location shown on site map Areal extent _____                      Depth _____ Remarks _____ _____	<input checked="" type="checkbox"/> Erosion not evident
4.	<b>Holes</b> <input type="checkbox"/> Location shown on site map Areal extent _____                      Depth _____ Remarks _____ _____	<input checked="" type="checkbox"/> Holes not evident
5.	<b>Vegetative Cover</b> <input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> Cover properly established <input checked="" type="checkbox"/> No signs of stress <input checked="" type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram) Remarks <u>Some woody vegetation observed. Noted in photos from walk-over. Not noted on a diagram</u>	
6.	<b>Alternative Cover (armored rock, concrete, etc.)</b> <input checked="" type="checkbox"/> N/A Remarks _____ _____	
7.	<b>Bulges</b> <input type="checkbox"/> Location shown on site map Areal extent _____                      Height _____ Remarks _____ _____	<input checked="" type="checkbox"/> Bulges not evident
8.	<b>Wet Areas/Water Damage</b> <input checked="" type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Wet areas <input type="checkbox"/> Location shown on site map                      Areal extent _____ <input type="checkbox"/> Ponding <input type="checkbox"/> Location shown on site map                      Areal extent _____ <input type="checkbox"/> Seeps <input type="checkbox"/> Location shown on site map                      Areal extent _____ <input type="checkbox"/> Soft subgrade <input type="checkbox"/> Location shown on site map                      Areal extent _____ Remarks _____ _____	
9.	<b>Slope Instability</b> <input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map Areal extent _____ Remarks _____ _____	<input checked="" type="checkbox"/> No evidence of slope instability

<p><b>B. Benches</b>                    <input type="checkbox"/> Applicable    <input checked="" type="checkbox"/> N/A                  (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)</p>		
1.	<p><del><b>Flows Bypass Bench</b></del>                    <input type="checkbox"/> Location shown on site map                    <input type="checkbox"/> N/A or okay                  Remarks _____                  _____</p>	
2.	<p><del><b>Bench Breached</b></del>                    <input type="checkbox"/> Location shown on site map                    <input type="checkbox"/> N/A or okay                  Remarks _____                  _____</p>	
3.	<p><del><b>Bench Overtopped</b></del>                    <input type="checkbox"/> Location shown on site map                    <input type="checkbox"/> N/A or okay                  Remarks _____                  _____</p>	
<p><b>C. Letdown Channels</b>    <input checked="" type="checkbox"/> Applicable    <input type="checkbox"/> N/A                  (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)</p>		
1.	<p><b>Settlement</b>                    <input type="checkbox"/> Location shown on site map                    <input checked="" type="checkbox"/> No evidence of settlement                  Areal extent _____                    Depth _____                  Remarks _____                  _____</p>	
2.	<p><b>Material Degradation</b>    <input type="checkbox"/> Location shown on site map                    <input checked="" type="checkbox"/> No evidence of degradation                  Material type _____                    Areal extent _____                  Remarks _____                  _____</p>	
3.	<p><b>Erosion</b>                    <input type="checkbox"/> Location shown on site map                    <input checked="" type="checkbox"/> No evidence of erosion                  Areal extent _____                    Depth _____                  Remarks _____                  _____</p>	

4.	<b>Undercutting</b>	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____ _____		
5.	<b>Obstructions</b>	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____ _____		
6.	<b>Excessive Vegetative Growth</b>	Type _____	
	<input checked="" type="checkbox"/> No evidence of excessive growth		
	<input checked="" type="checkbox"/> Vegetation in channels does not obstruct flow		
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Remarks _____ _____		
<b>D. Cover Penetrations</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	<b>Gas Vents</b>	<input type="checkbox"/> Active <input type="checkbox"/> Passive	
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	
	<input type="checkbox"/> N/A		
	Remarks _____ _____		
2.	<b>Gas Monitoring Probes</b>	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
3.	<b>Monitoring Wells (within surface area of landfill)</b>	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
4.	<b>Leachate Extraction Wells</b>	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
5.	<b>Settlement Monuments</b>	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N/A
	Remarks _____ _____		

<b>E. Gas Collection and Treatment</b>		<input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A
1.	<b>Gas Treatment Facilities</b> <input type="checkbox"/> Flaring <input type="checkbox"/> Thermal destruction <input type="checkbox"/> Collection for reuse <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____	
2.	<b>Gas Collection Wells, Manifolds and Piping</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____	
3.	<b>Gas Monitoring Facilities</b> ( <i>e.g.</i> , gas monitoring of adjacent homes or buildings) <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____	
<b>F. Cover Drainage Layer</b>		<input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A
1.	<b>Outlet Pipes Inspected</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____ _____	
2.	<b>Outlet Rock Inspected</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____ _____	
<b>G. Detention/Sedimentation Ponds</b>		<input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A
1.	<b>Siltation</b> Areal extent _____ Depth _____ <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Siltation not evident Remarks _____ _____ _____	
2.	<b>Erosion</b> Areal extent _____ Depth _____ <input checked="" type="checkbox"/> Erosion not evident Remarks _____ _____ _____	
3.	<b>Outlet Works</b> <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____ _____	
4.	<b>Dam</b> <input type="checkbox"/> Functioning <input checked="" type="checkbox"/> N/A Remarks _____ _____ _____	

<b>H. Retaining Walls</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	<b>Deformations</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Deformation not evident Horizontal displacement _____ Vertical displacement _____ Rotational displacement _____ Remarks _____ _____	
2.	<b>Degradation</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Degradation not evident Remarks _____ _____	
<b>I. Perimeter Ditches/Off-Site Discharge</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
1.	<b>Siltation</b> <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Siltation not evident Areal extent _____ Depth _____ Remarks _____ _____	
2.	<b>Vegetative Growth</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Vegetation does not impede flow Areal extent _____ Type _____ Remarks <u>Future housekeeping needs to address vegetation in perimeter ditches as it may impede flow in the future.</u>	
3.	<b>Erosion</b> <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____ _____	
4.	<b>Discharge Structure</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks <u>Discharge of surface water along the southwestern corner fo the landfill does not occur due to previous construction activities in the area.</u>	
<b>VIII. VERTICAL BARRIER WALLS</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	<b>Settlement</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____ _____	
2.	<b>Performance Monitoring</b> Type of monitoring _____ <input type="checkbox"/> Performance not monitored Frequency _____ <input type="checkbox"/> Evidence of breaching Head differential _____ Remarks _____ _____	

<b>C. Treatment System</b>		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	<b>Treatment Train</b> (Check components that apply) <input type="checkbox"/> Metals removal <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input checked="" type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Filters _____ <input type="checkbox"/> Additive ( <i>e.g.</i> , chelation agent, flocculent) <u>Drewspurse</u> <input checked="" type="checkbox"/> Others <u>SVE system</u> <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> Sampling ports properly marked and functional <input checked="" type="checkbox"/> Sampling/maintenance log displayed and up to date <input checked="" type="checkbox"/> Equipment properly identified <input checked="" type="checkbox"/> Quantity of groundwater (gallons) treated annually <u>2002-34222381; 2003-246051697; 2004-30023665; 2005-40479339; 2006(June)-23677692</u> <input type="checkbox"/> Quantity of surface water treated annually _____ Remarks _____ _____		
2.	<b>Electrical Enclosures and Panels</b> (properly rated and functional) <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
3.	<b>Tanks, Vaults, Storage Vessels</b> <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
4.	<b>Discharge Structure and Appurtenances</b> <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
5.	<b>Treatment Building(s)</b> <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input checked="" type="checkbox"/> Chemicals and equipment properly stored Remarks <u>General housekeeping needs to be improved.</u>		
6.	<b>Monitoring Wells</b> (pump and treatment remedy) <input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells located <input checked="" type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks <u>Wells need general maintenance, such as painting and labeling. Some vegetation control also required. Protection from vehicular traffic (bollards) needs to be evaluated.</u>		
<b>D. Monitoring Data</b>			
1.	Monitoring Data <input checked="" type="checkbox"/> Is routinely submitted on time <input checked="" type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input checked="" type="checkbox"/> Groundwater plume is effectively contained <input checked="" type="checkbox"/> Contaminant concentrations are declining		

<b>D. Monitored Natural Attenuation</b>			
1.	<b>Monitoring Wells</b> (natural attenuation remedy)		
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Good condition
	Remarks _____		<input checked="" type="checkbox"/> N/A
<b>X. OTHER REMEDIES</b>			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
<b>XI. OVERALL OBSERVATIONS</b>			
<b>A. Implementation of the Remedy</b>			
<p>Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).</p> <p><u>The review of documents and environmental monitoring data and the results of the Five-Year Review inspection indicate that the remedy for the OU-1, which consists of controlling contaminant migration through the use of a pump and treatment system, is functioning as intended. Hydraulic and groundwater data indicate that the migration of the plume has been controlled by the use of the extraction wells. The performance monitoring indicates that VOC contamination is being extracted by the wells and treated to levels typically less than the detectable limit through the air stripper. Based on groundwater monitoring, potential receptors have not been exposed to VOC contamination from the landfill.</u></p> <p><u>Groundwater level measurements and groundwater contaminant information have been collected as prescribed. These results from these data indicate that the plume has been contained and unacceptable migration has not occurred.</u></p> <p><u>Influent and effluent data from the pump and treatment system indicate that VOC contaminated groundwater is being extracted and the mass removed over time has decreased. Effluent data supports that the air stripper system is effective in removing VOC contamination from the groundwater.</u></p> <p><u>The results of the five-year inspection indicate that the fencing installed to prevent access to the landfill and the surface water controls are functioning adequately. Institutional controls that restrict land use and groundwater use will be implemented at a later date as outlined in the Record of Decision.</u></p>			

<p><b>B. Adequacy of O&amp;M</b></p>
<p>Describe issues and observations related to the implementation and scope of O&amp;M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.</p> <p><u>Operation and maintenance activities are performed as outlined in the <i>OU-1 Pump and Treatment Operational and Maintenance Plan</i>. The DOE also performs annual inspections on long-term remedies as called out in this plan and other O&amp;M Plans. DOE has performed groundwater monitoring, effluent monitoring and system monitoring and has found this remedy to be functioning as intended, thus far.</u></p>
<p><b>C. Early Indicators of Potential Remedy Problems</b></p>
<p>Describe issues and observations such as unexpected changes in the cost or scope of O&amp;M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.</p> <p><u>There are no early indicators of potential issues that could affect the protectiveness of the remedy.</u></p>
<p><b>D. Opportunities for Optimization</b></p>
<p>Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.</p> <p><u>A checklist should be developed for a more regimented inspection of the OU-1 landfill area. To date, environmental restoration activities have been on-going at the Mound site and a full-time presence that can address events in the OU-1 area is available. In the future, limited resources at the Mound site will reduce the ability to identify potential issues.</u></p>





Phase I Groundwater Remedy

4.	<b>Permits and Service Agreements</b> <input type="checkbox"/> Air discharge permit <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits _____ Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
5.	<b>Gas Generation Records</b> Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
6.	<b>Settlement Monument Records</b> Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
7.	<b>Groundwater Monitoring Records</b> Remarks _____ Two annual reports and did in electronic database.	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
8.	<b>Leachate Extraction Records</b> Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
9.	<b>Discharge Compliance Records</b> <input type="checkbox"/> Air <input type="checkbox"/> Water (effluent) Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
10.	<b>Daily Access/Security Logs</b> Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A

IV. O&M COSTS											
1.	<p><b>O&amp;M Organization</b></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> State in-house  <input type="checkbox"/> PRP in-house  <input type="checkbox"/> Federal Facility in-house  <input type="checkbox"/> Other _____                 </div> <div style="width: 45%;"> <input type="checkbox"/> Contractor for State  <input type="checkbox"/> Contractor for PRP  <input type="checkbox"/> Contractor for Federal Facility                 </div> </div>										
2.	<p><b>O&amp;M Cost Records</b></p> <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> Funding mechanism/agreement in place Original O&M cost estimate _____ <input type="checkbox"/> Breakdown attached										
	Total annual cost by year for review period if available										
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">From _____</td> <td style="width: 15%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 15%;"></td> <td style="width: 35%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">Total cost</td> <td style="text-align: right;"><input type="checkbox"/> Breakdown attached</td> </tr> </table>	From _____	To _____				Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached
From _____	To _____										
Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached							
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">From _____</td> <td style="width: 15%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 15%;"></td> <td style="width: 35%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">Total cost</td> <td style="text-align: right;"><input type="checkbox"/> Breakdown attached</td> </tr> </table>	From _____	To _____				Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached
From _____	To _____										
Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached							
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">From _____</td> <td style="width: 15%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 15%;"></td> <td style="width: 35%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">Total cost</td> <td style="text-align: right;"><input type="checkbox"/> Breakdown attached</td> </tr> </table>	From _____	To _____				Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached
From _____	To _____										
Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached							
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">From _____</td> <td style="width: 15%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 15%;"></td> <td style="width: 35%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">Total cost</td> <td style="text-align: right;"><input type="checkbox"/> Breakdown attached</td> </tr> </table>	From _____	To _____				Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached
From _____	To _____										
Date	Date	_____	Total cost	<input type="checkbox"/> Breakdown attached							
3.	<p><b>Unanticipated or Unusually High O&amp;M Costs During Review Period</b></p> Describe costs and reasons: _____ _____ _____ _____ _____										
V. ACCESS AND INSTITUTIONAL CONTROLS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A											
Refer to the Site Inspection Checklist for ICs											
<b>A. Fencing</b>											
1.	<p><b>Fencing damaged</b>      <input type="checkbox"/> Location shown on site map      <input type="checkbox"/> Gates secured      <input type="checkbox"/> N/A</p> Remarks _____ _____										
<b>B. Other Access Restrictions</b>											
1.	<p><b>Signs and other security measures</b>      <input type="checkbox"/> Location shown on site map      <input type="checkbox"/> N/A</p> Remarks _____ _____ _____										

<b>C. Institutional Controls (ICs)</b>			
1.	<b>Implementation and enforcement</b>		
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Type of monitoring (e.g., self-reporting, drive by)	_____	
	Frequency	_____	
	Responsible party/agency	_____	
	Contact	_____	
	Name	Title	Date Phone no.
	Reporting is up to date	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Reports are verified by the lead agency	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Violations have been reported	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Other problems or suggestions:	<input type="checkbox"/> Report attached	
	_____	_____	
	_____	_____	
	_____	_____	
	_____	_____	
2.	<b>Adequacy</b>	<input type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A
	Remarks	_____	
	_____	_____	
	_____	_____	
<b>D. General</b>			
1.	<b>Vandalism/trespassing</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No vandalism evident
	Remarks	_____	
	_____	_____	
2.	<b>Land use changes on site</b>	<input type="checkbox"/> N/A	
	Remarks	_____	
	_____	_____	
3.	<b>Land use changes off site</b>	<input type="checkbox"/> N/A	
	Remarks	_____	
	_____	_____	
<b>VI. GENERAL SITE CONDITIONS</b>			
<b>A. Roads</b>	<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A	
1.	<b>Roads damaged</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Roads adequate <input type="checkbox"/> N/A
	Remarks	_____	
	_____	_____	
	_____	_____	

<b>B. Other Site Conditions</b>	
Remarks _____ _____ _____ _____ _____ _____	
<b>VII. LANDFILL COVERS</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
<b>A. Landfill Surface</b>	
1.	<b>Settlement (Low spots)</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____                      Depth _____ Remarks _____ _____
2.	<b>Cracks</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident Lengths _____                      Widths _____                      Depths _____ Remarks _____ _____
3.	<b>Erosion</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Areal extent _____                      Depth _____ Remarks _____ _____
4.	<b>Holes</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident Areal extent _____                      Depth _____ Remarks _____ _____
5.	<b>Vegetative Cover</b> <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input type="checkbox"/> No signs of stress G Trees/Shrubs (indicate size and locations on a diagram) Remarks _____ _____
6.	<b>Alternative Cover (armored rock, concrete, etc.)</b> <input type="checkbox"/> N/A Remarks _____ _____
7.	<b>Bulges</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Bulges not evident Areal extent _____                      Height _____ Remarks _____ _____
8.	<b>Wet Areas/Water Damage</b> <input type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Wet areas <input type="checkbox"/> Location shown on site map                      Areal extent _____ <input type="checkbox"/> Ponding <input type="checkbox"/> Location shown on site map                      Areal extent _____ <input type="checkbox"/> Seeps <input type="checkbox"/> Location shown on site map                      Areal extent _____ <input type="checkbox"/> Soft subgrade <input type="checkbox"/> Location shown on site map                      Areal extent _____ Remarks _____ _____
9.	<b>Slope Instability</b> <input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of slope instability Areal extent _____ Remarks _____ _____

<b>B. Benches</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)	
1.	<b>Flows Bypass Bench</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay Remarks _____ _____
2.	<b>Bench Breached</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay Remarks _____ _____
3.	<b>Bench Overtopped</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay Remarks _____ _____
<b>C. Letdown Channels</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)	
1.	<b>Settlement</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of settlement Areal extent _____ Depth _____ Remarks _____ _____
2.	<b>Material Degradation</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation Material type _____ Areal extent _____ Remarks _____ _____
3.	<b>Erosion</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion Areal extent _____ Depth _____ Remarks _____ _____

4.	<b>Undercutting</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of undercutting Areal extent _____ Depth _____ Remarks _____ _____ _____
5.	<b>Obstructions</b> Type _____ <input type="checkbox"/> No obstructions <input type="checkbox"/> Location shown on site map      Areal extent _____ Size _____ Remarks _____ _____ _____
6.	<b>Excessive Vegetative Growth</b> Type _____ <input type="checkbox"/> No evidence of excessive growth <input type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map      Areal extent _____ Remarks _____ _____ _____
<b>D. Cover Penetrations</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Gas Vents</b> <input type="checkbox"/> Active <input type="checkbox"/> Passive <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	<b>Gas Monitoring Probes</b> <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
3.	<b>Monitoring Wells (within surface area of landfill)</b> <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
4.	<b>Leachate Extraction Wells</b> <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
5.	<b>Settlement Monuments</b> <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N/A Remarks _____ _____ _____

<b>E. Gas Collection and Treatment</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Gas Treatment Facilities</b> <input type="checkbox"/> Flaring <input type="checkbox"/> Thermal destruction <input type="checkbox"/> Collection for reuse <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
2.	<b>Gas Collection Wells, Manifolds and Piping</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	<b>Gas Monitoring Facilities</b> ( <i>e.g.</i> , gas monitoring of adjacent homes or buildings) <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____
<b>F. Cover Drainage Layer</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Outlet Pipes Inspected</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____
2.	<b>Outlet Rock Inspected</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____
<b>G. Detention/Sedimentation Ponds</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Siltation</b> Areal extent _____ Depth _____ <input type="checkbox"/> N/A <input type="checkbox"/> Siltation not evident Remarks _____ _____
2.	<b>Erosion</b> Areal extent _____ Depth _____ <input type="checkbox"/> Erosion not evident Remarks _____ _____
3.	<b>Outlet Works</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____
4.	<b>Dam</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____

<b>H. Retaining Walls</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Deformations</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Deformation not evident Horizontal displacement _____ Vertical displacement _____ Rotational displacement _____ Remarks _____ _____
2.	<b>Degradation</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Degradation not evident Remarks _____ _____
<b>I. Perimeter Ditches/Off-Site Discharge</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Siltation</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Siltation not evident Areal extent _____ Depth _____ Remarks _____ _____
2.	<b>Vegetative Growth</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A <input type="checkbox"/> Vegetation does not impede flow Areal extent _____ Type _____ Remarks _____ _____
3.	<b>Erosion</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____ _____
4.	<b>Discharge Structure</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____
<b>VIII. VERTICAL BARRIER WALLS</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	<b>Settlement</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____ _____
2.	<b>Performance Monitoring</b> Type of monitoring _____ <input type="checkbox"/> Performance not monitored Frequency _____ <input type="checkbox"/> Evidence of breaching Head differential _____ Remarks _____ _____

<b>C. Treatment System</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Treatment Train</b> (Check components that apply) <input type="checkbox"/> Metals removal <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Filters _____ <input type="checkbox"/> Additive (e.g., chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually _____ <input type="checkbox"/> Quantity of surface water treated annually _____ Remarks _____ _____ _____
2.	<b>Electrical Enclosures and Panels</b> (properly rated and functional) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____
3.	<b>Tanks, Vaults, Storage Vessels</b> <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____
4.	<b>Discharge Structure and Appurtenances</b> <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____
5.	<b>Treatment Building(s)</b> <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored Remarks _____ _____ _____
6.	<b>Monitoring Wells</b> (pump and treatment remedy) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
<b>D. Monitoring Data</b>	
1.	Monitoring Data <input checked="" type="checkbox"/> Is routinely submitted on time <input checked="" type="checkbox"/> Is of acceptable quality
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input checked="" type="checkbox"/> Contaminant concentrations are declining

<b>D. Monitored Natural Attenuation</b>	
1.	<p><b>Monitoring Wells</b> (natural attenuation remedy)</p> <p><input checked="" type="checkbox"/> Properly secured/locked      <input checked="" type="checkbox"/> Functioning      <input checked="" type="checkbox"/> Routinely sampled      <input type="checkbox"/> Good condition</p> <p><input checked="" type="checkbox"/> All required wells located      <input checked="" type="checkbox"/> Needs Maintenance      <input type="checkbox"/> N/A</p> <p>Remarks <u>Wells need general maintenance, such as painting and labeling. Some vegetation control also required. Protection from vehicular traffic (bollards) needs to be evaluated.</u></p>
<b>X. OTHER REMEDIES</b>	
<p>If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.</p>	
<b>XI. OVERALL OBSERVATIONS</b>	
<b>A.</b>	<b>Implementation of the Remedy</b>
<p>Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).</p> <p><u>Groundwater monitoring has been performed as prescribed in the <i>Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan</i>. Results from this monitoring indicate that concentrations do not exceed target levels. However, this remedy has not been implemented long and insufficient data is available to determine a trend in contaminant concentrations. Confirmatory sampling for radium, barium, chromium, and nickel are also inconclusive at this time.</u></p>	
<b>B.</b>	<b>Adequacy of O&amp;M</b>
<p>Describe issues and observations related to the implementation and scope of O&amp;M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.</p> <p><u>Operation and maintenance activities are performed as outlined in the <i>Operations and Maintenance (O&amp;M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property</i> and the <i>Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan</i>. DOE has performed annual walk-overs and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended, thus far. DOE has also performed groundwater monitoring and has found the groundwater remedy to be functioning as intended, thus far.</u></p>	

<b>C. Early Indicators of Potential Remedy Problems</b>
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. <u>None</u> _____ _____ _____
<b>D. Opportunities for Optimization</b>
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>None</u> _____ _____ _____

End of current text

## **Appendix C**

### **Site Inspection Photographs**

End of current text



Parcel 4 – Looking South



Parcel 4 – View to the South



Retention Basin in Parcel 4



Well 0319 – Phase I



Well 0400 – Phase I



Well 0411 – Phase I



Well 0442 – Phase I



Well 0443 – Phase I



Well 0444 – Phase I



Well 0445 – Phase I



Well P033 – Phase I



Seep 0617 – Phase I



Overview of the OU-1 Area – Looking South



Fencing along North End of OU-1 Landfill



Fencing along NW Corner of OU-1 Landfill



North End of OU-1 Landfill – Looking West



OU-1 Landfill – Looking SW



West Side of OU-1 Landfill



SW Corner of OU-1 Landfill – Looking East



OU-1 Landfill – Looking NW



SE Corner of OU-1 Landfill



Overview of OU-1 Area – Looking West



OU-1 Landfill and Overflow Pond – Looking South



Letdown Structure into Overflow Pond



Outfall Structure in Overflow Pond



Vegetation in West Concrete Drainage Ditch and SVE Piping



Drainage along South End of OU-1 Landfill



Drainage at SW Corner of OU-1 Landfill



SVE Point



SVE Point Pressure Gauge



Well 0413 – OU-1 Area



Well 0414 – OU-1 Area



Well 0416 – OU-1 Area



Well 0423 – OU-1 Area



Building 300 – OU-1 Pump and Treatment



Building 301 – SVE System



Buildings 300 and 301



Drewspere in Building 300



Air Stripper in Building 300



Interior Building 301



Interior Building 301



Interior Building 301

End of current text